PRICE REGULATION OF STEEL

HEARING

BEFORE THE

COMMITTEE ON INTERSTATE COMMERCE UNITED STATES SENATE

SIXTY-FIFTH CONGRESS

FIRST SESSION

ON

S. 2756

A BILL TO PROVIDE FURTHER FOR THE NATIONAL SECURITY AND DEFENSE BY REGULATING THE PRODUCTION, SALE, AND DISTRIBUTION OF IRON ORE, IRON, STEEL, AND OTHER PRODUCTS

SEPTEMBER 21, 1917

PART 1

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PRICE REGULATION OF STEEL.

FRIDAY, SEPTEMBER 21, 1917.

UNITED STATES SENATE,
COMMITTEE ON INTERSTATE COMMERCE,
Washington, D. C.

The committee met pursuant to call, at 10 o'clock a. m., at room 326, Senate Office Building, Senator Francis G. Newlands presiding.

Present: Senators Newlands (chairman), Pomerene, and Cummings.

Also present: Hon. Joseph E. Davies and Hon. Victor Murdock, Commissioners of the Federal Trade Commission; Dr. Francis Walker, of the Federal Trade Commission; and Arthur W. Fairchild, attorney at law, of Milwaukee, Wis.

The committee proceeded to consider the bill (S. 2756) to provide further for the national security and defense by regulating the production, sale, and distribution of iron ore, iron, steel, and their products, as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That by reason of the existence of a state of war it is essential to the national security and defense for the successful prosecution of the war and for the support and maintenance of the Army and Navy to assure an adequate supply and equitable distribution at reasonable prices and to facilitate the movement of iron, iron ore, steel, and their products, and because thereof the President of the United States shall be, and he is hereby, authorized and empowered, whenever and wherever in his judgment necessary for the efficient prosecution of the war and for the purposes aforesaid, to fix the price of iron ore, iron, steel, and their products wherever and whenever sold, either by producer or dealer, to establish rules for the regulation of and to regulate the method of production, sale, shipment, distribution, apportionment, or storage thereof among dealers and consumers, domestic or foreign. Said authority and power may be exercised by him in each case through the agency of the Federal Trade Commission during the war or for such part of said time as in his judgment may be necessary.

Then if, in the opinion of the President, any such producer or dealer fails or neglects to conform to such prices or regulations, or to conduct his business efficiently under the regulations and control of the President as aforesaid, or conducts it in a manner prejudicial to the public interest, then the President is hereby authorized and empowered in every such case to requisition and take over the plant, business, and all appurtenances thereof belonging to such producer or dealer as a going concern, and to operate or cause the same to be operated in such manner and through such agency as he may direct during the period of the war, or for such part of said time as in his judgment may be necessary.

That any producer or dealer whose plant, business, and appurtenances shall have been requisitioned or taken over by the President shall be paid a just compensation for the use thereof during the period that the same may be requisitioned or taken over as aforesaid, which compensation the President shall fix or cause to be fixed by the Federal Trade Commission.

That if the prices so fixed, or if, in the case of the taking over or requisitioning of the plant, business, and the appurtenances of any such producer or

dealer, the compensation therefor as determined by the provisions of this act be not satisfactory to the person or persons entitled to receive the same, such person shall be paid 75 per cent of the amount so determined, and shall be entitled to sue the United States to recover such further sum as, added to said 75 per cent, will make up such amount as will be just compensation in the manner provided by section 24, paragraph 20, and section 145 of the Judicial Code.

While operating, or causing to be operated, any such plants or business and appurtenances thereof, the President is authorized to prescribe such regulations as he may deem essential for the employment, control, and compensation of the employees necessary to conduct the same.

Or if the President of the United States shall be of the opinion that he can thereby better provide for the common defense and the purposes aforesaid and whenever, in his judgment, it shall be necessary for the successful prosecution of the war, then he is hereby authorized and empowered to require any or all producers of iron, iron ore, steel, and their products in any section of the United States, or in the entire United States, to sell their products only to the United States through an agency to be designated by the President, such agency to regulate the resale of such iron ore, iron, steel, and their products and the prices thereof, and to establish rules for the regulation of and to regulate the methods of production, shipment, distribution, apportionment, or storage thereof among dealers, consumers, domestic or foreign, and to make payment of the purchase price thereof to the producers thereof, or to the person or persons legally entitled to said payment.

That within 15 days after notice from the agency so designated to any producer of iron ore, iron, steel, and their products that his or its output is to be so purchased by the United States as hereinbefore described, such producer shall cease shipments of said product upon his own account and shall transmit to such agency all orders received and unfilled or partially unfilled, showing the exact extent to which shipments have been made thereon, and thereafter all shipments shall be made only on authority of the agency designated by the President, and thereafter no such producer shall sell any of said products except to the United States through such agency, and the said agency alone is hereby authorized and empowered to purchase during the continuance of the requirement the output of such producers.

That the prices to be paid for such products so purchased shall be based upon a fair and just profit over and above the cost of production, including proper maintenance and depletion charges, the reasonableness of such profits and cost of production to be determined by the Federal Trade Commission, and if the prices fixed by the said commission of any such product purchased by the United States as hereinbefore described be unsatisfactory to the person or persons entitled to receive the same, such person or persons shall be paid 75 per cent of the amount so determined and shall be entitled to sue the United States to recover such further sum as added to said 75 per cent will make up such amount as will be just compensation in the manner provided by section 24, paragraph 20, and section 145 of the Judicial Code. All such products so sold to the United States shall be sold by the United States at such uniform prices, quality considered, as may be practicable and as may be determined by said agency to be just and fair.

Any moneys received by the United States for the sale of any such iron ore, iron, steel, and their products may, in the discretion of the President, be used as a revolving fund for further carrying out the purposes of this section. Any moneys not so used shall be covered into the Treasury as miscellaneous receipts.

That when directed by the President, the Federal Trade Commission is hereby required to proceed to make full inquiry, giving such notice as it may deem practicable, into the cost of producing under reasonably efficient management at the various places of production the following commodities, to wit: Iron ore, iron, steel, and their products.

The books, correspondence, records, and papers in any way referring to transactions of any kind relating to the mining, production, sale, or distribution of all producers or other persons whose iron ore, iron, steel, or their products have or may become subject to this act, and the books, correspondence, records, and papers of any person applying for the purchase of iron ore, iron, steel, or their products from the United States shall at all times be subject to investigation by the said agency, such person or persons shall promptly furnish said agency any data relating to the business of such person or persons which said

agency may call for, and said agency is hereby authorized to procure information with reference to the business of such producers and the customers therefor in the manner provided for in sections 6 and 9 of the act of Congress approved September 26, 1914, entitled "An act to create a Federal Trade Commission, to define its powers and duties, and for other purposes." and said agency is hereby authorized and empowered to exercise all the powers granted to the Federal Trade Commission by said act for the carrying out of the purposes of this act.

Having completed its inquiry respecting any commodity in any locality, it shall, if the President has decided to fix the prices at which any such commodity shall be sold by producers and dealers generally, fix and publish maximum prices for both producers of and dealers in any such commodity, which maximum prices shall be observed by all producers and dealers until further action thereon is taken by the commission.

In fixing maximum prices for producers the commission shall allow the cost of production, including the expense of operation, maintenance, depreciation, and depletion, and shall add thereto a just and reasonable profit.

In fixing such prices for dealers the commission shall allow the cost to the dealer and shall add thereto a just and reasonable sum for his profit in the transaction.

The maximum prices so fixed and published shall not be construed as invalidating any contract in which prices are fixed, made in good faith prior to the establishment and publication of maximum prices by the commission.

Whoever shall, with knowledge that the prices of any such commodity have been fixed as herein provided, ask, demand, or receive a higher price, or whoever shall, with knowledge that the regulations have been prescribed as herein provided, violate or refuse to conform to any of the same, shall, upon conviction, be punished by a fine of not more than $5,000, or by imprisonment for not more than two years, or both. Each independent transaction shall constitute a separate offense.

Nothing in this section shall be construed as restricting or modifying in any manner the right the Government of the United States may have in it own behalf or in behalf of any other Government at war with Germany to purchase, requisition, or take over any such commodities for the equipment, maintenance, or support of armed forces at any price or upon any terms that may be agreed upon or otherwise lawfully determined.

The Chairman. The committee will come to order. The purpose of this hearing is to consider Senate bill 2756, which is inserted in the record.

Notice has been given to various operators in steel and other products of this hearing, and the Federal Trade Commission has also been requested to appear by its representatives. I wish to inquire whether there are any representatives of corporations or others engaged in the production, sale, or distribution of iron ore, iron, steel, and other products present. [After a pause.] There seems to be no one present on behalf of those interests, and the committee will now proceed to hear representatives of the Federal Trade Commission in regard to this matter.

Mr. Davies, will you be good enough to make a statement regarding the result of your investigations as to the production, sale, and distribution of iron ore, iron, steel, and other products? We will first hear the statement of Commissioner Davies.

STATEMENT OF HON. JOSEPH E. DAVIES, COMMISSIONER FEDERAL TRADE COMMISSION.

Commissioner Davies. Mr. Chairman, Commissioner Murdock and myself appear for the commission. Dr. Walker, our chief economist, and Mr. Wooster, our chief accountant on steel, also appear, as does also Mr. Arthur W. Fairchild, of Milwaukee, Wis., an attorney at law who is acting as special counsel for us. Mr. Fairchild has given

the form of this legislation considerable thought and study and is also familiar with our investigations of the steel industry. Mr. Fairchild is a lawyer of unusual standing and ability and is at the command of the committee to make any examination of legal authorities which you might desire in this connection.

In thinking this matter over it occurred that it might be of some advantage to the committee if a brief statement of the physical organization of the steel industry were first made as a preface to the statement as to costs. If you would like to have me go into that matter I should be glad to do so.

The Chairman. The committee will be very glad to hear from you.

Commissioner Davies. The basis of the steel industry is iron ore. Iron ore is produced or mined principally in northern Minnesota and Michigan, and is called lake ore, and in Alabama this ore is called southern ore. There are other fields of ore scattered over the United States, but they are relatively small.

The other ingredients of pig iron are coke and limestone. The coke is produced principally in three districts—the Connellsville district of Pennsylvania, the Pocahontas district in the Virginias, and Birmingham coke in Alabama. Coke is produced from coal. It takes about a ton and a half of coal to produce a ton of coke. Pig iron is made with 2 tons of northern lake iron ore to 1 ton of coke, with some limestone. The lake iron ore is brought down to lower lake ports, so called, from Minnesota, shipped by freight to the blast furnaces in, for example, the valley or Pittsburgh districts, or is produced in localities adjacent to the steel companies in the South.

Iron ore and coke go into the blast furnace, and the result is pig iron, either pig-iron castings—which is ordinary cast iron—or that which is the greater part goes directly into the manufacture of steel. The principal kinds of pig iron are four: Bessemer pig is made from low-phosphorus ore and is used in Bessemer steel: basic pig differs in chemical quality and constitutes the large quantity that goes into open-hearth steel production; also foundry pig and malleable pig for castings.

In the integrated steel plant the pig iron from the blast furnace goes direct to the steel furnace. It goes either to the Bessemer furnace or to the open-hearth furnace. The great bulk of the production is open hearth. The open-hearth process takes a longer time than the Bessemer, and produces a different quality of steel.

So that when pig iron is produced you either have it in the form of cold pig, in which event it is sold to the steel companies, which in turn melt it again and make it into steel by the Bessemer or open-hearth process, or it goes hot to the steel works, where the two processes are owned by the same organization. The pig iron and scrap come out of the steel works in the form of ingots. The ingot is poured out into containers, which are generally upon moving platforms or cars. It then goes through the solidifying process and goes hot to the rolling mill where it is converted into either slabs, blooms, or billets—slabs being further rolled into plates, and blooms being further used to produce shapes, rails, etc.

The total production of pig iron in the country is approximately 40,000,000 tons; of steel ingots, approximately 43,000,000 tons. The 43,000,000 tons of ingot steel is used about as follows: Approximately 10,000,000 is wastage and is reused later on; 3,200,000 tons

go into shapes; 5,400,000 tons go into plates; approximately 10,000,000 tons go into bar-mill products, rods, and the like; 2,600,000 tons go into black sheets so called; 2,400,000 go into galvanized sheets, and the remainder goes into other finished products.

The number of blast furnaces in the country is approximately 400. In the steel industry, generally speaking, there are four classes of producers of steel. The classes are based on the degree of integration of the processes of manufacture. There is one class that owns its iron ore; in some degree its transportation facilities, railroads in the mining region, boats on the Great Lakes; its blast furnaces, which produce its pig, its coke requirements, and its rolling mills. So it is completely integrated from ownership of the ore through to the final production of the product. This class produces steel, of course, more cheaply than any of the others. The next class is the class that has to buy in large part their iron ore and their coke, so that this class loses profits in the process which the first class gets on the production of iron ore and the production of coke, and has to pay this profit in the price of this material. Its costs figure up to that degree higher. Then there is the third class that buys in large part its pig iron and starts its manufacturing process with the steel works. Its costs are still higher. Of course you can readily see that if class one, for instance—the most highly integrated class—can produce pig iron at, say, for instance, $16 or $18 a ton, it is in a position where it can make steel much cheaper than the class that has to buy its pig iron at a $35-contract price, or possibly the $50 or $54 market price, which now obtains.

Class 4 is the class that buys its steel billets or steel ingots and rolls plates and shapes or other products out of the steel that it buys. It has the highest costs of the four.

CENTRALIZATION IN STEEL INDUSTRY.

Another fact that we find in the steel industry that is different from many other industries is that it is probably one of the most highly centralized of all industries in the country. As I stated, the total capacity of the country in pig iron is approximately 40,000,000 tons. Seventy per cent of all that pig iron is produced by 29 companies in the United States. The number of companies making steel ingots—which I stated had a total capacity of 43,000,000 tons in the entire country—is about 200. Eighty-two per cent of all the steel ingots produced are produced by 21 companies in the United States.

SHIPS AND STEEL CONSTRUCTION.

Steel ships are made out of steel shapes and steel plates. A steel ship is really a steel box. The shapes are the heavy steel that go to make the structure, and the plates make the sides, and about 30 per cent of the steel used in the ship is the heavier structural steel; 70 per cent plates.

Of the total of steel shapes produced in the United States approximately 89 per cent is produced by five companies. Of the steel plates produced in the United States 92 per cent is produced by 18 companies, and of bar-mill products 62 per cent of the total is produced by eight companies, so that the industry is centralized to a very

remarkable degree in the hands of a very few companies. To that extent, of course, it might be more easily subject to central Government control or regulation.

There are 6,000 coal mines in the United States. There are 200 steel companies, and of plates and shapes practically 75 per cent of the production is produced by from five to eight companies in the United States.

PRICE HISTORY.

Price history in the steel industry is interesting. The price of iron ore at the lower lake ports—which is the basic price which is generally taken in market quotations—varied for northern lake ore from 1895 to 1911 as follows: An average of about $2.40 in 1895; an average of about $3 in 1896; an average of about $2.25 in 1897; an average of about $2.25 in 1898; an average of about $2.50 in 1899; an average of about $4.50 in 1900; an average of about $3 in 1901; an average of about $2.75 or $3.50 in 1902; about $4 in 1903; about $2.80 in 1904; about $3 in 1905; about $3.75 in 1906; about $4.50 in 1907; about $3.75 in 1908; about the same in 1909; about $4.50 in 1910; and about $3.75 in 1911.

These are fairly typical of the prices of ore at the lower lake ports.

Senator CUMMINS. That is, for Michigan and Minnesota ore?

Commissioner DAVIES. For Michigan and Minnesota ore; yes. As to coke prices, I have tables here which I will be glad to submit for the purposes of the record, which show Connellsville coke for furnace delivery from 1901 to 1914, ranging from a minimum of, we will say, approximately $1.40 a ton to a maximum during the period of 14 years of possibly $5 or $6 a ton, and which occurred only in 1902 for three months.

Senator POMERENE. Your prices are at the ovens, I take it.

Commissioner DAVIES. Yes, sir. A fairer high average would be probably $2.75 or $3.

The CHAIRMAN. Has this increase been a gradual one?

Commissioner DAVIES. I was just getting to that, Mr. Chairman. For a period of about 14 years prior to 1915 the price of coke, except for a short time during the anthracite strike, did not exceed $3 and was much less than this generally.

We find, as to coke, pig iron, billets, shapes, and beams, one common fact as to price. Prices remained about normal, or perhaps in 1913 or 1914 a little below normal, up to about the middle of 1915. When the war broke, the industry did not seem to know "where it was at," and prices were perhaps a little below normal. But the price started on its ascent quite uniformly in August and September of 1915 and went up very rapidly. Connellsville coke, the price for prompt shipment being in August about $1.50, by February, 1916, had reached $3.38; by October, 1916, had reached $4.88; and by December had reached $8.38. In August of this year it reached $16. The increase occurred between August, 1915, and August, 1917.

The CHAIRMAN. What was the unit of coke?

Commissioner DAVIES. Per ton, net ton. The present price of Connellsville coke for prompt shipment is $13. It has fallen since August.

Senator CUMMINS. That increase in price began in 1913?

Commissioner DAVIES. About August, 1915.

Senator CUMMINS. The year after the war?

Commissioner DAVIES. Yes; and it began quite uniformly as to all steel products at that time. Bessemer pig iron, Pittsburgh, per gross ton, the price of which ranged from as low as $10 to as high as——

Senator POMERENE. Of what time are you speaking?

Commissioner DAVIES. $10 in 1898. I might read the average of prices for each year in order to give you an idea of the conditions: In 1898, about $10; 1899, about from $11 to $24; 1900, from $13 to $24 a ton; 1901, from $13 to $16; 1902, from $16 to $21.75; 1903, from $14 to $21; 1904, from $12.40 to $16; 1905, from $14 to $18; 1906, from $18 to $23; 1907, from $19 to $23; 1908, from $15 to $19; 1909, from $15 to $19; 1910, from $15 to $20. In 1911 it is interesting to know that the uniform price all through the year for the first nine months was $15.90 for every month. The market was very stable for some reason or other. In 1912, from $14.90 to $18; 1913, from $15 to $17; 1914, $14.06 to $14.90. So that all during the year of 1914 the price of pig iron, Bessemer pig at Pittsburgh, was between $14.59 and $15.09.

Senator CUMMINS. You have given in each of those years the lowest and highest prices?

Commissioner DAVIES. The market quotations.

Senator CUMMINS. Have you in the average prices for those years taken into account the amount sold at each price?

Commissioner DAVIES. For some years; yes, sir. I will take this up later. The price for pig iron remained at about $14.95 until August, 1915, when the price started up, and it went from $14.95 in July to $19 in December; to $22 by August, 1916; $35 in December, 1916; and went to as high as $58 this year, and is now about $52; so that in 18 months the price of pig iron went from $14.60 to about $52 to $58.

With reference to pig iron, it may be stated that for 30 years not to exceed three times perhaps did the price of pig go up to $25, and rarely went over $20. That will give you some measure of the advance in price from August, 1915, to August, 1917.

Billets started in August, 1915, at about $23, and in November, 1916, had gotten up as high as $52. The prevailing price for billets seemed to range from 1901 from $20 to $28 or $30 maximum. All during the year 1914 the price of billets, Bessemer steel at Pittsburgh, was from $19 to $21 and remained at $20 until August, 1915, and went to $57.50 in December, 1916.

Senator CUMMINS. That covers your investigation in the year 1916?

Commissioner DAVIES. No, sir. I am now discussing the rise of prices. We have since made investigation of 1916 costs and price and 1917 costs and price, and the Bureau of Corporations made studies in 1902 and 1906 and also in 1910—the costs and prices in 1910—which I will discuss later. Commissioner Murdock has just stated to me that in August of this year billets went up to $100 in contrast with the price that obtained of $20 in 1914.

Plates in 1914 ranged from $1.05 to $1.20 per hundredweight, tank plates at Pittsburgh, and to $4.25 per hundred weight in November, 1916, have since gone very much higher, and I think are now

in the neighborhood of $7 or $8. They reached $9 in July of this year in contrast to $1.20 in 1914.

The steel plates which were ordinarily sold at from $1.06 to $2.40 have been sold apparently as high as $11 a hundredweight, which would be in the neighborhood of $260 a ton, and we have heard of some offers being made for steel plates at 17 cents, which is pretty nearly eight times the prevailing price that obtained in 1914.

Senator POMERENE. Illuminate that one point, although perhaps you are going into it later on. Have you figures showing the increase in labor costs during those years? We have had pointed out the price of sheets and plates, or rather plates, and in that connection it might be interesting to have you state what the increase in the labor cost was?

Commissioner DAVIES. I can not take it up at this point. I would a little prefer to take it up later.

Senator POMERENE. Very well; I would prefer to have you do so.

Commissioner DAVIES. What I am trying to develop now for your information is the very remarkable increase in prices in a very short period of time as to all of these materials.

Senator CUMMINS. In stating the cost of steel plates, do you use the long or short ton?

CAUSES FOR ADVANCE IN PRICES.

Commissioner DAVIES. The charts are based on the long ton. The causes for this very remarkable advance in prices we believe to be two at least. In the first place, there has been very marked increases in costs. Wages have increased, and I noticed in the morning paper that the United States Steel Corporation has made another additional 10 per cent wage advance for all of its employees. It has been stated, and I think it is sustained by the judgment of our experts, that a 10 per cent wage advance by the United States Steel Corporation means the increase in cost of steel on heavy products of about $1.50 a ton. Wage advances have been as high as 40 or 50 per cent during the last two or three years. So if there have been four increases of 10 per cent by, to illustrate, the United States Steel Co., the increase in cost of steel to the United States Steel Co. would be about $6 by that increase.

Senator CUMMINS. $6 a ton?

Commissioner DAVIES. Yes. That is correct.

Senator CUMMINS. Before you go into the question of cost, there is one prominent form of steel that you have not mentioned, namely, steel rails. There is a very peculiar phenomenon, I think, with regard to that product. Can you state the price of steel rails during this time?

Commissioner DAVIES. The present price of steel rails, I think, is about $72 for light section rails.

Senator CUMMINS. Will you please give the gradual rise in price of steel rails?

Commissioner DAVIES. The present price of steel rails is about $75. Mr. Wooster and Dr. Walker suggest that this chart will show what the rise in steel rails has been. The price of steel rails shows no fluctuation from 1900 to about March, 1916; the uniform price was $28. In March, 1916, it started up and by July had reached the price of

$33, and by November, 1916, it reached the price of $38. I understand the prevailing price for light rails is $75; for heavy rails about $42.

Senator POMERENE. I have the quotations here taken from Bradstreet. From January on until June 2 the prevailing price was $40 a ton and June 23, $41 a ton. That is as it is furnished me.

Senator CUMMINS. For what year?

Senator POMERENE. The present year.

The CHAIRMAN. 1917?

Senator POMERENE. Yes.

The CHAIRMAN. I have never heard of the price being over $42 for steel rails. During what time has the price of $75 per ton prevailed?

Commissioner DAVIES. I think the current market price is $75. That price is for light rails. You are right as to heavy rails.

The CHAIRMAN. Has it only recently gone to that figure?

Commissioner DAVIES. In December, 1916, the price was $38.

Senator CUMMINS. I do not know what the price at this moment is, but I have been informed that until the middle of the present year the price has not been above $41 per ton. I am not sure about that.

Commissioner DAVIES. We can ascertain that for you, Senator.

Senator CUMMINS. Can you give me the same information with regard to the price of structural steel, not fabricated any further than punching? They turn out two kinds of structural steel, one fully fabricated and put up, riveted, etc., while other forms are simply punched ready for the contractor when he comes to put up the steel in the building. Have you the prices of those forms of steel?

Commissioner DAVIES. We may have those, Senator. We have confined ourselves pretty closely for immediate purposes to the basic materials, such as ore, coke, pig iron, ingots, plates, and shapes. Now, we have a large amount of material in addition to that, but it has not been brought together. Such information as we have, or that we can get, will be furnished for the record, if you desire it.

Senator CUMMINS. I see there is a table here which gives the price of beams. I do not know whether it assumes that they are simply rolled or whether it assumes that they are further fabricated. It begins with $100 in January, 1898, and ends with $3.25 in December, 1916. Probably that is sufficient to satisfy my mind on that point.

Dr. WALKER. It is unfabricated steel.

Senator CUMMINS. Yes; that is unfabricated steel. Pardon me for interrupting you; you were going into the matter of costs.

Commissioner DAVIES. It occurred to me that you would like to have our judgment as to the reason for this remarkable increase in price. As I have stated, there have been some remarkable increases in costs, but of course those increases in cost have been very much smaller relatively and absolutely than increases in price. The second principal reason, as we view it, is the fact that there has been a tremedous demand for steel, and the supply of steel relatively is limited, and it takes time to build steel plants. The production has been increased or will be increased probably 500,000,000 as to sheets and plates by the first of this year, but generally speaking the available supply is constant and the demand has been tremendous. For instance, a vast amount of shipping has been destroyed, as we know, and there is a great demand for steel both for the allies and for our own uses. The Government's demand for steel, I understand, will

be in the nighborhood of from 4,000,000 to 6,000,000 tons. That increase takes out of the available supply for industrial and commercial uses a very much larger factor than has ever been taken out before. That reduces the amount that will be available for domestic and private consumption.

Senator POMERENE. Have you in mind what was the normal consumption of steel by the Government prior to this year?

Commissioner DAVIES. I do not know, but I should say it was not one-fifth of the present consumption. I think that is a conservative estimate, but I can ascertain that, roughly speaking, I should say not nearly one-fifth.

The CHAIRMAN. As these prices have advanced I imagine the use of steel for industrial and domestic purposes has diminished whilst the governmental use has increased. Is that not a fact?

Commissioner DAVIES. That would be so, Senator, provided the demand were a constant and normal demand and not an increasing demand, but I do not think it is so in the present condition. The commercial and industrial world have never experienced such demands for their production as now. There has never been such a demand for steel as within the last two years, and the demand is such that it takes absolutely no cognizance of price; that is to say, if a man has a contract which he is obliged to meet, and if he has a large force of men. 2,500, we will say, and an organization which it has taken him years to build up, he has to have steel in order to have his plant going and to keep his organization from being disrupted and scattered. So he asks for steel, and he says the price is a secondary consideration with him. What he wants is steel. The result is that the price of the commodity bears no relation whatsoever to the cost of its production, and prices have gone up on steel, not so much because the producers have exacted a high price for their product, perhaps, as the fact that the buyers are competing with each other for the same production, and if there are six or eight buyers for one commodity and they can not get it any place else, they will big against each other and bid the price up. So that the market, so far as the price of steel is concerned, has been a runaway market, so to speak.

In our judgment, that is one of the big factors in the increase, or one of the principal reasons for the increase of price of steel production.

Senator CUMMINS. In speaking of the governmental demand for steel during the last year, do you mean to include the foreign demand as well as the domestic demand—I mean the demand of the foreign governments as well as our own?

Commissioner DAVIES. I was advised as long ago as 10 weeks that the demands of the Government were three and one-half million.

Senator CUMMINS. That was our Government?

Commisisoner DAVIES. Yes, sir; and in conference with the War Industries Board, Judge Lovett, Mr. Brookings, and Mr. Baruch, on Monday last, it was stated by Mr. Repfogle, who was handling steel for Mr. Baruch, that the total of requirements would be in the neighborhood of five to six million tons, and I do not know whether that included the requirements of the allies or not, but my judgment is that it did. As to that I would not be definite.

Senator CUMMINS. Did you state the Government capacity with production?

Commissioner DAVIES. Yes, sir; I stated that the total capacity for steel ingots was about 40,000,000 tons.

Senator CUMMINS. What is the capacity at this time as compared with the capacity a year ago or two years ago?

Commissioner DAVIES. I think the capacity has been somewhat extended, Senator, but I understand that of that character of steel which the Government needs principally, which is sheets and plates, that it has increased about 500,000 tons up to the 1st of January.

Senator CUMMINS. But the kind of steel that the people use generally, with respect to that, it has increased much more, has it not?

Commissioner DAVIES. The capacity has increased.

Senator CUMMINS. Yes, sir.

Commissioner DAVIES. I doubt very much whether the capacity has increased substantially, because it takes time to put up the plants. It has increased, but, relatively, I do not think it is a very large increase. The amount of steel that is produced for shapes, I think, is about 3,200,000 tons, and the amount for plates about 5,300,000 tons, so to take production of steel for plates and shapes is about 8,000,000, and the principal requirements of the Government come from that character of production, so that the ratio of 6 to 40 does not adequately show the degree to which the Government invasion of the market will affect the market as to private consumers, but, rather, it would be the ratio of 6 to 12 or 18. In other words, the amount taken out, 6,000,000 tons, will affect the market very substantially as to the requirement of ordinary industry, because it is the same class of steel they largely use.

Senator CUMMINS. Has this increase in the demand for shapes, forms, and plates, and the like, has that diminished the capacity of the mills for the production of structural steel for building, for bars, for merchants, and for rods and nails, and the like of that?

Commissioner DAVIES. It has, in this way, that in order to get the steel for plates and shapes which the Navy and the Shipping Board will require it will be necessary to take steel that would ordinarily be used in bridge construction, building construction, and that class of products that you have described in order to supply the needs of the Government for ship building and the needs of industry for shell steel, and for those things which have a greater priority claim than, for instance, the construction of buildings would have.

Senator CUMMINS. That is, they have not enough iron ore to supply the entire demand?

Commissioner DAVIES. They can not produce enough steel to supply the entire demand.

Senator CUMMINS. You mean the blast furnaces are inadequate or the mines are insufficient?

Commisisoner DAVIES. The blast furnaces and the steel-rolling mills are being put up as rapidly as they can be, I believe, but it takes time to get them going and to get their plants organized. I think it should be stated, in fairness, that they are having trouble with labor also. They claim that their labor is less efficient than it was—that a great many of their men are being taken away.

The CHAIRMAN. Have you any idea of what additional amounts of capital have been put into plants for the production of steel and pig iron during the period of the war?

Commisisoner DAVIES. I know that about 500,000 tons additional capacity for plates and shapes have been put up, and that the investment required, in my judgment, would be in the neighborhood of $15,000,000 for that production, and, I dare say, a great deal more construction than that represents has been started.

To conclude, the fact is that the price situation that we are now confronting is due to competitive buying and, in some measure, to increase of cost, and those increases are proceeding month by month. The last costs that we had were in June, 1917. The costs increased every month from January, 1917, up, and the costs now, in August, are undoubtedly higher than the costs in June. For instance, pig iron for the United States Steel Corporation in 1917 cost $1.27 more than in 1916; shapes in May cost $5 more than in 1916; plates $8 more than in 1916.

There have been increases in costs in labor, but these costs represent only in part the reasons for the increases in costs. Each class above the highest integrated class buys its raw material, ore, coke, pig iron, or steel at great advances, and the company that buys its pig iron at $35 or $50 a ton finds a great advance in the costs of its steel. The high cost of basic materials is translated into higher costs in the final finished product. The increases in costs have neither absolutely nor relatively been anywhere near commensurate with increase of price, and you can not account for the increase in price by the increase in cost, and you must account for the increase in price in part, at least, because of the competitive buying in the market.

Senator CUMMINS. Mr. Davis, I do not want to disturb the order of your argument—I mean the scheme that you have in mind—but if at some time you could take a fully integrated company, the United States Steel Corporation, for example, and begin with the iron ore, not counting the value of the ore in the ground, but begin with the production of the ore, and state what added cost there is in taking ore from the ground and putting it on the docks at Lake ports, and transporting it to the blast furnaces, so that we would know the increase in cost of a ton of pig iron to that company, and then follow that pig iron through the various forms that it takes in manufacture, it would give me a very comprehensive as well as a logical conception of what the added costs have been and what their effect ought to be in the price.

Commissioner DAVIES. I was just coming, Senator, to the costs along that line, but I will be very glad to answer your question now.

Senator CUMMINS. That would be simply to take up the first class of producers which you gave and follow its operations through.

Commissioner DAVIES. Suppose I give you this; I think it will answer your idea:

If coal costs, we will say, $2, the conversion cost of that coal into coke would probably be $1.25; the oven profit on coke would probably be 25 or 50 cents, including overhead; that would make the coke at the oven——

Senator CUMMINS. It would cost approximately $5 a ton on the present standards?

Commissioner DAVIES. That is, under average prices that have obtained heretofore, yes; practically on present standards. Then if you were to take the iron ore and freight to the northern Lake ports and add the freight down the Lakes to lower Lake ports, and add freight to the furnace and take the regular market quotations for ore and say that ore under present conditions could be quoted at $5 at lower Lake ports, then the cost of your iron ore in your pig iron would be $10, two times five—that is, two tons of the pig to one ton of coke, to which freight to the furnace would have to be added.

Senator CUMMINS. That would be the cost of the material?

Commisioner DAVIES. Two tons of ore and one ton of coke; so your pig iron would be made up of two tons of ore at $5, which would be $10, one ton of coke at $5, which would make the total $15, and then your freight on your coke and ore to the blast furnace would be about $2.75 to $3, your limestone about 60 cents, and your cost above probably $2, which would bring the total cost of the pig iron to about $19 or $20 a ton. Then you would add to that your profit per ton in order to get your profit on investment.

That is not the integrated concern. But suppose that a concern has to buy iron ore under those conditions, it would produce pig iron at from $19 to $23 a ton; and on that basis would get its pig iron at that price instead of having to buy it at $52, the market price.

Now, to the integrated concern the cost of pig iron would be about $16 a ton. That is, the saving it would make by profit on intercompany profits would be about that difference. If you take out intercompany profits from your book cost of $16 a ton for pig iron, you would reduce their costs to approximately $12 a ton, so that the integrated concern that owns its ore, that owns each stage in the process up to the manufacture of the pig, could make the pig iron at a net cost of about $12 a ton, whereas the concern that had to buy its ore and buy its coke and pay its freight at these prices will be paying about $25 a ton. Does that answer you?

Senator CUMMINS. Partly, although not quite as much in detail as I would want. Take this company, what is the ore costing it when it loads it on the car at the mine per ton at the same time giving allowances for the increases in labor? What does a ton of ore cost the United States Steel Co. on its cars or on the cars of the railroad company which it owns at the mine?

Commissioner DAVIES. The Bureau of Corporations made an investigation covering 1902–1906 of the cost of ore at the mine, cost of transportation, cost of lower Lake ports, and here are the averages for all of the lower Lake prices at that time, and that covers practically the United States Steel.

Senator CUMMINS. That does not include the increases in labor since that time?

Commissioner DAVIES. No; but I can give you those later.

Commissioner MURDOCK. I think it would clarify this some if Mr. Davies understood just what Senator Cummins is seeking to develop. You are speaking of conversion cost, Senator, is that it?

Senator CUMMINS. Yes; I want to know what it costs at the present time one of these fully organized companies—integrated companies, as Mr. Davies called them—to produce steel in various

forms. I suggest beginning at the mine and coming down to the final form.

Commissioner Murdock. With a detailed showing of each conversion cost from one step to the other?

Senator Cummins. With each conversion cost. It probably is in greater detail than you have prepared yourself to give.

Commissioner Davies. No, sir; we have it here, Senator.

Senator Pomerene. The report of the Bureau of Corporations gives all that for those years.

Commissioner Davies. In part, yes. Take an integrated concern. In 1902–1906 the total cost of its basic pig iron was $12.82. That $12.82 was made up as follows:

Blast furnace expense, $1.91; the coke, $3.30; limestone, $0.47; the ore metallic mixture, $7.14; a total of $12.82. The metallic mixture cost, $7.14, includes $4.37 for freight, $1.02 for labor at mine, and other items. The cost of the ore at the mine was $1.23, the cost at the lower Lake ports was $2.64; there being 2 tons of ore made the total cost $7.14. The two factors the Senator wants for comparnson are the cost at the mine, $1.23, and the cost at the lower Lake port, $2.64, and the cost at the blast furnace, $7.14.

Senator Cummins. That would not be the cost of the ore at the blast furnace; you mean that would be the cost of the ore that would be necessary to make 1 ton of steel?

Commissioner Davies. The cost of 2 tons of ore.

Senator Cummins. Twice $2.64 does not amount to $7.14. I think they must have added something else in there.

Commissioner Davies. That is right.

Senator Cummins. Twice $2.64 would be $5.28.

Commissioner Davies. The point is, 2 tons of ore would be $5.28; but that is only ore; there are other items, freight cost, labor, etc.

Senator Cummins. That would be the cost at the blast furnace?

Mr. Wooster. No; at lower Lake ports.

Commissioner Davies. That makes the cost at the furnace on 2 tons $7.14, including freight.

Senator Cummins. That is what I wanted to get, to show that you included in that the freight from the port to the blast furnace.

Commissioner Davies. Exactly.

Senator Cummins. How much does it cost to lay down the same ore at the same blast furnace now?

Commissioner Davies. At the lower Lake ports the cost now would be $3, in contrast to $2.64. The freight would remain the same, so that the increase in cost would be 36 cents per ton, which would be 72 cents per ton of pig plus any increase in conversion cost at blast furnaces.

Senator Cummins. I am not getting up to that yet. I hope you do not think I am asking too much in detail.

Commissioner Davies. Oh, no.

Senator Cummins. But you have an increased cost of 68 cents a ton, 68 cents for the 2 tons at the blast furnace. Now, does that include the increased cost of labor in getting that ore to the blast furnace?

Commissioner Davies. No; there would be some increase in labor costs.

Senator CUMMINS. Now, we come to the blast furnace. You put in 2 tons of ore and a ton of coke. What is the present cost of getting the coke to the blast furnace—I mean, of the coke and getting it to the blast furnace—by one of these companies which owns its own coal fields and coke ovens?

Commissioner DAVIES. I wonder whether this statement would answer this question. Increase in cost of pig iron to the integrated company, as shown by our June figures on pig iron, over what normally obtains, as shown by their books, does not exceed $4 a ton. It does not exceed for billets an increase of over $6 a ton. Is it that you want to know—what the changed conditions have brought in increased cost for an integrated company? That is about it.

Senator CUMMINS. It is about $6 a ton for ingots or billets?

Commissioner DAVIES. Yes, sir.

Senator CUMMINS. For which—ingots or billets?

Commissioner DAVIES. We will say billets.

Senator POMERENE. That would make a total increase in cost, then, from the crude ore to the billets, of $10?

Senator CUMMINS. No; he is including that. The total increase from the mine right up to the billet, you say, is $10 a ton; that is the increase in cost as compared with four years ago?

Commissioner DAVIES. On plates and shapes. I am more familiar with plates and shapes than I am with billets, but on plates and shapes the increase—and that is a stage further—the increase has not been more than $9 a ton. Let me give you these figures, Senator. For pig iron for 1916 the average cost of integrated concerns for pig iron was $11.15; for June, 1917, the average cost was $13.62; so that the increase in cost is practically $2.50. Now, the costs for the same character of company in 1910 would be about $10.09 and for 1902–1906 it would be about $13.

Senator CUMMINS. So it would make the cost in the middle of this year how much?

Commissioner DAVIES. To the low-cost company?

Senator CUMMINS. The integrated company.

Commissioner DAVIES. $13.62.

Senator CUMMINS. On pig iron?

Commissioner DAVIES. On pig iron, but the average cost to the concern that has to buy its ore and coke would be $21.

Senator CUMMINS. I understand, but for that kind of company we have been considering the present cost of pig iron does not exceed $14 a ton?

Commissioner DAVIES. That is right.

Senator CUMMINS. Then, how much would it cost per ton to turn it into billets?

Commissioner DAVIES. Let me take sheets and plates, because those are what our figures are directed to more, because of shipping requirements, and for the purpose of illustration are just as good.

Senator CUMMINS. Very well.

Commissioner DAVIES. In 1902–1906 the average cost of plates and shapes, including intercompany profits, was $27; in 1910, for the same class, excluding intercompany profits, $22.50. That is the highly integrated concern, the comparable cost would be about the same. In 1916 the average cost was $27.44, which excluded inter-

company profits. In 1917 the cost in May or June was $34, so the statement I made that it was approximately $6 or $8 increase over normal is correct.

Senator CUMMINS. And that includes the profits on what you call the intercompany profits?

Commissioner DAVIES. That excludes them. If you included them it would add $4 or $5 a ton.

Senator CUMMINS. $34 a ton. Now, what was the price of those same shapes and plates at that time?

Commissioner DAVIES. Plates at the present time are about $8 a hundredweight.

Senator POMERENE. That is $160 a ton?

Commissioner DAVIES. Yes; and they run as high as $11 per hundredweight.

Senator POMERENE. Have you figured in another way—what would be the per cent of profit?

Commissioner DAVIES. Yes, sir. I think it would be better if I could just simply go through and give you a brief résumé of what these figures show.

Senator POMERENE. And in that connection I would like this, if you have got the information, and then I will not interrupt you further. First, show the profits to these companies at present prices per ton, and then show the profit on the investment, if you can.

Senator CUMMINS. I think you are right about pursuing your own line, but I wanted, simply as a conclusion to this inquiry that I had been making, to have it appear that for a form of steel which costs one of these fully organized companies $34 a ton, the company is now charging $179 a ton.

Commissioner DAVIES. The United States Steel Corporation, I believe, is selling as high as 4.5 and 5 cents a pound. I was told by one of their officials that they did not sell at a higher price than 4.5 cents; that they had been offered as high as $11 a hundredweight and had refused it.

Senator CUMMINS. I was not referring to any particular company. You quoted $8 a hundred as the market price for these forms, reckoning 2,240 pounds to the ton, the result is $179.20 for a ton of steel that costs the company, not including profit, $34.

Commissioner DAVIES. I think, Senator, this will be following right along that line further. You have the costs now, including intercompany profits, on shapes and plates. The Bureau of Corporations made an estimate in 1913 of the investments per ton of plates necessary to produce a ton of plates, and then stated what the profits per ton of plates would be required in dollars, to bring a certain profit in per cent on the investment required to produce it, and a margin over cost of $7.28 on plates, this item that you are figuring, would then yield a per cent on estimated total integrated investment of 8.8 per cent. A margin of $15 would bring a return on investment of 18 per cent. To answer your question, then, if the plates, we will say, cost $40, including intercompany profits to-day, and were sold at $160, that would leave a net profit of $120, and the profit on investment would be very close to 140 per cent. It should be understood that his computation is on estimated investment.

Senator POMERENE. Per year?

Commissioner DAVIES. Yes, sir; per year.

Does that answer your question, Senator, as to this particular item?

Senator POMERENE. Yes; I think it does.

The CHAIRMAN. Is there such an increase of plant, in order to cover this emergency, as to warrant any such profit? In other words, is the risk of plants which are now being constructed, or which ought to be constructed, to meet the demand being idle after this emergency is over: does that risk warrant so large an increase of profit?

Commissioner DAVIES. This estimate of investment required to produce a ton of pig iron plates and shapes, which I would like to go through, was based upon the investment cost at normal times, where the building costs were probably lower than they are now, and if you were to take present investment costs they, of course, would be very much higher, but for the great bulk of the production the old investment costs are the costs upon which it should be computed, because their plants were going concerns.

Senator CUMMINS. You have stated, I think, there has been an additional investment of not over $5,000,000?

Commissioner DAVIES. I know of that much. I think there is more.

The CHAIRMAN. Is there any danger of any part of that new investment cost being scrapped after the war?

Commissioner DAVIES. Of course that is a matter of judgment, Senator. There are opinions both ways. My own judgment would be there is not any danger of its being scrapped. I think the use and need of steel would be much greater after the war than it was prior to the war, but that that factor should be considered in making a price I would agree to.

I can run through these various basic materials here very briefly and give the costs for 1902–1906, 1910, 1916, and 1917. The average cost in 1902–1906 of Lake ore, Missabe, was $2.45; 1910, $2.26; 1916, $2.55; average for 1917, $3.16. That is iron ore.

Senator CUMMINS. At the lower Lake ports?

Commissioner DAVIES. Yes, sir. Coke, 1902–1906, $1.64; 1910, $1.54; average for 1916, $2.62; average for 1917, $3.12, an increase in cost of almost 100 per cent on coke.

The average price of pig iron in 1916 in class 1, the concerns that own their iron ore and own their coke, was $11.15; their average cost in 1917 was $13.62, an increase of about $2.50 a ton over 1916; 1916 being about the average they obtained normally theretofore.

In class 2, the concerns that had to buy their iron ore and buy their coke, the average cost of pig iron for 1916 was $16 and the average cost for 1917 was $21, a net increase this year of $5.

On steel shapes, the average cost in 1916 of class 1, the highly integrated companies, was $27.44; in 1917, it was $34.56.

Class 2, the class that had to buy its iron ore and coke, in 1916, the cost for shapes was $31.30; 1917, $43.11, an increase of about $11.

Lastly, the class that had to buy its steel, the cost of shapes in 1916 was $42, as contrasted with the average, normal price, of $27, theretofore, and in 1917, $48, which was $6 more than in 1916.

On plates, the average cost was about $27 in 1916, for class 1; for the same product in 1917 the average was about $35, an increase of $7.

In class 2, those that bought their iron ore and coke, the cost in 1916 for plates was $37, and in 1917, $46, an increase of about $9 in cost. You see the wider spread as you go up in the higher classes.

For class 3, the class that buys its pig iron, its cost of plates was $38 in 1916, average, as against $27 normal, and $53 in 1917, a jump of $15 this year over last year. This class is paying higher prices for its pig iron this year than last.

In class 4, the class that bought its semifinished product, the cost in 1916 for plates was $51, and the cost in 1917 was $78. It shows not only a higher cost for pig, but a higher cost for steel. That gives the range in costs.

The CHAIRMAN. The war, I believe, broke out in August, 1914?

Commissioner DAVIES. August 1, 1914.

The CHAIRMAN. When was the effect of that war appreciably felt in the steel market?

Commissioner DAVIES. I think it was felt immediately and prices became subnormal, but it started the price upward about August, 1915, a year later, and then they went up by leaps and bounds.

The manner in which we conducted this cost inquiry was briefly this: We took each one of the basic materials, ore, coke, pig iron, ingots, plates, and shapes. We got the average costs that obtained in 1902–1906 and 1910; then the 1916 costs; then the 1917 costs, and then the present prevailing prices; we also estimated the profit per ton of product in dollars it would be necessary to procure to yield a certain return, we will say of 12 per cent, on the investment required to produce that ton of product.

For instance, in iron ore our costs cover 85 per cent of the production of the country. The average cost of Mesaba ore at lower Lake ports, 1902–1906, was $2.45 per gross ton. The average profit during that period on all the ore sold was 44 cents per ton. The present quotations on all lake ores is at $1.60 a ton higher than in 1916, whereas the increases in the average cost were from 70 to 80 cents a ton. The price has doubled. The cost increased 77 cents; the price increased $1.60. Profits for a period of five years, 1902–1906, on Lake ore were from 44 to 50 cents, which would give a profit of 12 per cent on the investment required to produce a ton of ore. On present costs 90 per cent of Mesabi iron ore cost $3.94, or less at lower Lake ports. We took the large percentage because these figures were needed in order to furnish a base, I presume, for price, and it is perfectly apparent that if you fix a flat price, unless you fix the price high enough, you will not get the production. So we took the figure at which 90 per cent of the production of ore could be produced. Ninety per cent of Mesabi ore could be laid down at lower Lake ports at $3.94 cost. If 12 per cent on investment were added, 50 cents would have to be added to get a price on that basis.

For the five-year period on coke, Connellsville beehive coke, the average profit on all coke was 51 cents a ton. The average cost for that five-year period, 1902–1906, was $1.46 a ton. In 1917 the average cost of Connellsville coke was $3.10 a ton. Eighty-five per cent of Connellsville coke in merchants' ovens cost $4.08, and 90 per cent of the steel companies' ovens cost $3.10. A 12 per cent profit per ton, as computed by the Bureau of Corporations, on the steel companies' investments in 1910 would necessitate a profit on the cost of coke of about 55 cents a ton.

For the period 1902–1906 on pig iron the average book costs of northern pig iron were $14.04; the average profit of all companies for that period was $2.05 on all pig iron. On that basis it is com-

puted that they make about 12 per cent on the investment required to produce it.

In 1917, 84 per cent of the pig iron produced by the steel companies' furnaces cost $15.92 or less; 82 per cent of the northern merchants' furnaces cost $19.50 or less.

Senator CUMMINS. What was the year?

Commissioner DAVIES. 1917. And for merchants' furnaces, $19.50.

Now, the profit per ton in dollars in relation to investment: It has been estimated by the Bureau of Corporations in its reports heretofore made that on a basis of 12 per cent on the investment the margin of profit above cost per ton of pig iron for nonintegrated plants would range from $1.98 to $2.80; for an integrated plant it would range from $4.50 to $5. If the price of pig iron were fixed at $25 a ton and an integrated concern could produce that at $15 a ton and get a net profit of $10 a ton over cost, because their costs are low, such concern would make about 25 per cent.

Senator CUMMINS. What is to be said of these people who have been selling it at $55 a ton?

Commissioner DAVIES. A concern that sells it at $55 a ton, whose costs are $15 a ton, would be making a profit of $40 a ton, which would be in the neighborhood of 100 per cent profit.

Senator POMERENE. More than that, would it not be?

Commissioner DAVIES. At least that.

Senator POMERENE. It would be over 200 per cent.

Senator CUMMINS. He is not figuring it on cost. He is figuring it on the investment necessary to produce it.

The CHAIRMAN. Mr. Davies, have you any idea what the total investment is in all these steel companies?

Commissioner DAVIES. No, sir. The Bureau of Corporations based this estimate upon the Steel Co.'s investment in 1910, and Dr. Walker deserves the principal credit for having worked out an estimate of the amount of investment required per ton to produce a ton of the various products all the way through, and what the profits in dollars per ton would yield on the investment required to produce it.

Senator CUMMINS. We had that inquiry up here once, Senator, and I do not know what it is now, but a few years ago the investments were estimated to be about $3,500,000,000.

The CHAIRMAN. The Steel Trust alone has about a billion and a half dollars, according to its capitalization.

Commissioner DAVIES. Its capitalization is $1,400,000,000; its surplus is $493,000,000; its total book investment, therefore, is in the neighborhood of $1,900,000,000.

The CHAIRMAN. It is estimated to have about 60 per cent of the entire industry, is it not?

Commissioner DAVIES. From 40 to 60 per cent. So three and one-half billions, I presume, would be about all right.

The CHAIRMAN. I have just been making a calculation here. I understood you to say that the total production of steel was about 40,000,000 tons?

Commissioner DAVIES. Steel ingots.

The CHAIRMAN. And that the price of ingots before the war was what?

Commissioner DAVIES. The ingots were not sold.

The CHAIRMAN. Well, I mean the price of steel per ton, generally.

Commissioner DAVIES. The price of steel plates?

The CHAIRMAN. Yes; steel plates.

Commissioner DAVIES. The price of steel plates would be about $1.60 to $2 a hundredweight. That would be per gross ton $50 to $80.

Mr. WOOSTER. You can take Bessemer steel billets, which in 1913 were $28 a ton. They dropped to $20 a ton at the end of 1914.

The CHAIRMAN. What are they now?

Commissioner DAVIES. $100, shell billets.

Mr. WOOSTER. Bessemer steel billets went up as high as $100 in July, and are now quoted at $65.

The CHAIRMAN. I was just figuring, assuming $50 a ton profit is made on steel, do present prices indicate as much as that; do present prices indicate a profit of $50 a ton on steel?

Commissioner DAVIES. For some companies, yes, Senator; but you must bear in mind the costs vary.

The CHAIRMAN. Take the United States Steel Corporation?

Commissioner DAVIES. Take the most highly integrated company and plates and shapes at current prices, they make a great deal more than $50 a ton.

The CHAIRMAN. Very well. If the entire business were integrated, as the business of the United States Steel Corporation is, and $50 a ton were made on every ton of the 40,000,000 tons produced annually, that would be $2,000,000,000 profit, would it not, which would amount annually to more than one-half of the total capitalization?

Commissioner DAVIES. I am following you.

The CHAIRMAN. Have you seen any estimate of the amount of new capital that is required in order to meet, not only the governmental demands, but the domestic demands for steel?

Commissioner DAVIES. No, sir; I have not seen any such yet. But before you leave that other subject I think in fairness it should be said that a price that will give the highly integrated concern $50 profit may not give the small producer, the unintegrated class, 5 per cent on present costs. In other words, if you are going to have the smaller organizations produce you have got to fix a flat price that will necessarily give the low-cost man a very large margin of profit, $50 we will say, in order to make its possible that the little fellow can live.

Senator CUMMINS. There is another way by which the condition can be ameliorated. If you fix the price of iron ore at a reasonable figure, or fix the price of pig iron at a reasonable figure, then the little fellow will not suffer if there be a reasonable price fixed for the finished product.

Commissioner DAVIES. That is, of course, true, Senator, but I think you will find that if the prices are fixed right straight through on the basis of what 85 or 90 per cent of the production could be produced at, so as not to limit production, because production is as important as price in steel, I think you will find that similar differences in cost will still obtain, although the spread would not be quite as wide. In other words, if you fix the price of iron ore at $25, say, so as to get the little producer of pig iron in as well as the big producer, the low-cost producer would be making a very large

margin of profit out of the investment, whereas the little, high-cost producer of pig iron would be making a very small margin of profit, and there would probably be some producers of pig iron who would not produce at all at the price.

The CHAIRMAN. That is true, there is necessarily a spread, because there is a certain economy in production that can be secured in the fully integrated concern that can not be secured in the individual concern, but that spread will not be very great if the three classes that you have named, the second, third, and fourth classes, are able to buy their raw material. I think there are a good many instances in which a steel concern, if permitted to buy its pig iron at a fair price, could produce its finished product or article at a less cost than the United States Steel Corporation, giving the steel corporation profit for the various steps it takes in the production. But, as a general principle, you are right, but we can not endure a situation in which the smaller people are compelled to pay these enormous and unreasonable prices for their raw material. I think that is one of the great objects to be secured in this legislation. You agree with me, do you not?

Commissioner DAVIES. Yes; I agree with you entirely. If the prices of the basic materials—iron ore, coke, and pig—and ingots and billets were fixed so that the class 4 man could get them at that price it would reduce his cost very materially. The high prices of $68 and $92 cost, which we have found in some of the smaller companies, are largely reflected in the high cost for metallic mixture. That is, the high cost of their material. But still if you were to take the basic prices and fix them on a plane which would bring in 90 per cent of the production, we will say, you would still get your price for plates and shapes so high that it would bring a very large margin on investment, probably as high, to be conservative, as 36 per cent for the highly integrated man, where the little man would be making a profit of, say, 10 per cent, or some of them would make no profit at all.

Senator CUMMINS. I have not reduced that to a table or computation; I do not know, therefore I do not attempt to say; but you said that the merchant blast furnace, paying a reasonable price for ore, can produce pig iron for less than $20 a ton?

Commissioner DAVIES. Yes.

Senator CUMMINS. Now, from that time on, with his pig iron, there is no great difference between his cost and the cost of the highly organized concern?

Commissioner DAVIES. If you were to fix a price, Senator, so that you would get your production of ore and your production of coke, you would have to fix the prices so high that your price of pig iron would run up pretty high.

I do not want to leave a misapprehension on this. There are blast furnaces to-day whose costs for pig iron run up much higher than $20. There are merchant furnaces that pay as high as $6 or $7 per ton for their ore, $14 for the 2 tons of ore, and as high as $16 for their coke, so that will be $30 for coke and ore, and probably $3 or $4 for conversion costs and overhead, so their costs would come up per ton to $32 and $34. But that is due to the fact, as you have suggested, that the cost of ore and cost of coke is so high.

The CHAIRMAN. Do you know, Mr. Davies, what the steel output in tons of the United States Steel Corporation is?

Commissioner DAVIES. I think we have that. I think it runs about 40 or 50 per cent right straight through.

Senator CUMMINS. It is just about 10,000,000 tons.

The CHAIRMAN. That would be only 25 per cent.

Commissioner DAVIES. I think it is closer to 15,000,000 or 16,000,000 than 10,000,000. I would not be sure.

Dr. WALKER. About 15,000,000 tons finished product.

Senator CUMMINS. Have you got the report? I have not seen anything excepting their last annual report, but if you have that there it would give it in a moment.

The CHAIRMAN. Then how is it claimed it represents 40 to 60 per cent of the industry?

Senator CUMMINS. It owns the mines, owns the railroads, and owns the ships.

Commissioner DAVIES. Here is the fact: Of steel ingots the United States Steel Corporation produces 20,607,000 tons out of a total of all companies of 43,000,000 tons.

Senator CUMMINS. This is of ingots.

Commissioner DAVIES. Steel ingots: the United States Steel Corporation produces 20,607,000 tons. That is authentic. It is taken from the Iron and Steel Works Directory of the United States and Canada.

The CHAIRMAN. Do I understand that ingots is the basic form of steel?

Commissioner DAVIES. Yes, sir.

The CHAIRMAN. When you say that the United States Steel Corporation produces over 20,000,000 tons of steel ingots, that means 20,000,000 tons of all the steel that is produced then?

Commissioner DAVIES. All the basic steel that is produced; yes, sir: that is, nearly 50 per cent.

The CHAIRMAN. What is the difference between the ingot and the plate that you speak of in cost, in price, rather?

Commissioner DAVIES. Ingots are not sold to any extent: billets are sold. The billet is the rolled or shaped ingot. You asked the difference in cost?

The CHAIRMAN. In price.

Senator CUMMINS. He said that billets were $65 a ton and had been up to $100 a ton.

The CHAIRMAN. What are plates?

Commissioner DAVIES. Plates vary from $92 a ton up to $220 a ton.

The CHAIRMAN. I am endeavoring to make a calculation. If the United States Steel Corporation produces 20,000,000 tons annually of steel and the profit is $50 a ton, that would make $1,000,000,000 annual profit. Now, it is not contended that the Steel Trust does make that amount in profit, is it?

Commissioner DAVIES. No. A great deal of its product is at contract price, below the market. The Bureau of Corporations report states on supporting facts that when the United States Steel Corporation was organized with a capital of $1,400,000,000, of which $500,000,000 was common and the rest divided up between bonds and preferred stock, that the real value of the properties was in the neighborhood of $700,000,000. Since that time the United States

Steel common stock has gone from the low—I think that it has been as low as 8—up to as high as 126. It has built up a surplus of over $400,000,000, so that perhaps any water that obtained in 1901, when it was organized, has been solidified by the profits that have been turned back into investments and capital account, and the United States Steel Corporation, by reason of its integration and its efficiencies, on any flat price that is made, will make a very large percentage of profit (but the figures you name would be too high), because if the price of plates or shapes, or the price of pig is fixed at such a point that the production of the country will come out, because it can make it at the price fixed, it will have to be so high that the United States Steel Co. will be making a very large profit, whereas the smaller nonintegrated plant will be making a small profit.

Some of the salient facts which our investigations have disclosed are the very wide margins of cost between the high and low cost producers in the industry; that the prices in the market have been determined largely not by costs but by competitive buying, with a very large demand and a relatively limited supply; that costs are increasing; that if any price is fixed to produce volume of production it will have to be a price that will induce the high-cost man as well as the low-cost man to produce.

Then we have also found that a very large amount of the production is not getting these high market prices, and does not represent all profit, because there are a large number of old contracts outstanding at low prices. On the other hand, we find that a very large amount of material has been contracted for at high prices for the future, so that the producer has low contract prices that obtained before and now he is selling at higher contract prices, and it would not avail the general public advantage to have this legislation which you are contemplating enacting unless some provision was made to bring relief to those who are now under contract for basic materials at high prices. If the prevailing high prices of pig iron—say $50—should obtain for manufacturers who are manufacturing steel because of contracts and the price of pig was put down to $25, we will say, the man who was under contract to buy $50 pig would be at a distinct disadvantage because of his forehandedness in making provision for his wants as opposed to the man who got the $25 pig at price fixed. So that unless contracts for high-priced basic commodities are suspended, or power is given to some agency to suspend them in this legislation, a large amount of the benefit would be destroyed and, more than that, a great deal of inequity would arise because of the differences in costs, the Government price on the one hand and the contract price on the other.

Those are some of the salient facts that we have deduced in this situation. Mr. Murdock has participated with us in this investigation and I would be very glad if he would offer anything that occurs to him.

The CHAIRMAN. I am a little bit puzzled, because I have an impression in my mind that in recent debates it was stated that the war profits of the United States Steel Corporation would amount to $246,000,000 for the last year. Do you know whether any estimate has been made for this year?

Commissioner DAVIES. I do not, Senator.

The CHAIRMAN. What I was trying to do was to reconcile that comparatively small amount of war profits with the assumption that the United States Steel Corporation, producing 20,000,000 tons of steel annually and selling it at an average profit of $50 per ton, would have an increase of $1,000,000,000.

Senator POMERENE. Allow me to suggest that the war profits is a profit over and above the average profits of the steel company for years 1911, 1912, and 1913.

The CHAIRMAN. Yes, undoubtedly.

Commissioner DAVIES. And, Senator, I think you are going on a misapprehension. There is no $50 profit on steel ingots; they are converted into other products, which require additional investments to produce. Take billets. I presume that if the United States Steel Corporation could sell all of its billets at the current market price, or if it could have sold all at the current market price that obtained a couple of months ago of $100, and their cost on steel billets were in the neighborhood of $35 to $40, that they would make just exactly what you say they would make. As a matter of fact, they have not sold all of their product at that high price, and they have sold a large part of their product at low contract prices which obtained in the past, and they have refused, I am told, to sell some of their product, plates, and shapes, at a price higher than $5 a hundredweight, which would be $100 a gross ton, practically, on the theory that it was an unhealthy and unstable condition for the market to get into.

The CHAIRMAN. Yes; but $100 a ton would yield what profit?

Commissioner DAVIES. Well, $100 a ton on the cost of producing plates and shapes at a cost of, say, at the outside of $45, would be a profit of $50 a ton, and that would be——

The CHAIRMAN. Would you be good enough, Mr. Davies, to have your experts develop that line as suggested?

Commissioner DAVIES. Just exactly, Senator, what would you want us to get?

The CHAIRMAN. I want to ascertain, assuming that the steel production of the United States Steel Corporation is the same this year as it was last, and that the prices remain as they are, what amount of money the United States Steel Corporation at the end of the year 1917 would make as profit?

Commissioner DAVIES. That is, if they took the top market prices, or if they were so situated in light of their present contracts as would enable them to take the top prices?

The CHAIRMAN. If they would receive the prices which they are now charging.

Commissioner DAVIES. We do not know that they are receiving those prices; we do not know what their contracts are. They may have a great many contracts at these high prices, but probably have many at much lower prices.

The CHAIRMAN. Could you not ascertain that?

Commissioner DAVIES. Yes, sir; I think we could.

Mr. WOOSTER. I think it is because they are not selling that prices are so high. If they were selling there would be sufficient supply to bring the price down very, very materially.

The CHAIRMAN. What policy is it that prevents them from selling at the present prices?

Mr. WOOSTER. Contracts made for sale at lower prices.

The CHAIRMAN. Have you a knowledge of how long those contracts are to last? Those contracts, do they usually run more than a year?

Mr. WOOSTER. No, sir; I should say not more than six months.

The CHAIRMAN. Then, there can not be a very large amount of unexecuted contracts; at all events there can not be a very long period over which unperformed contracts will be operative; is that so?

Mr. WOOSTER. Yes, sir.

Commissioner DAVIES. We will follow that suggestion and get all the material we can on it, Senator.

Senator POMERENE. I want to make some suggestion, and after that I want to ask you a question.

Dr. WALKER. Taking 20,000,000 to start with as the ingot production 15,000,000 would be nearer their finished product quantity.

The CHAIRMAN. What would be a fair estimate?

Commissioner DAVIES. There is a certain amount of wastage.

Dr. WALKER. Take products on which the amount between price and cost would be exceptionally high. Probably plates would show as high a margin as anything. Naturally you get a very much bigger spread there, and then the third fundamental reason why that calculation would not naturally check up with your other information is one which has been repeated and emphasized already: That they, to a large extent, are not selling at those prices; that they are, to a large extent, executing prior contracts, below the market; and, to some extent, it may be those contracts will run to next year. That is a matter we have no detailed information on. And there are other points which might show a very great reduction in that computation.

The CHAIRMAN. I assumed there must be some explanation of it, but it has currently gone out to the public that they are making $50 a ton on their product.

Dr. WALKER. You see in some months they are making very much more than in others, if they sell at market prices. They are not necessarily selling at market prices at the present time.

Commissioner DAVIES. We do not wish to be understood as saying they do make that profit, Senator, and at no time have I stated it.

The CHAIRMAN. I understand, and understand I am not suggesting that anything you said was misleading at all, but we want the facts to go out to the public as they are, and the average man, hearing of these high prices for steel, will assume that those prices would be currently received for the current product, and then it is a very easy calculation to make out enormous profits, and I think it was advisable that this inquiry should be clear of any exaggerated impression given to the public mind.

Commissioner DAVIES. I agree with you, Senator, I have tried to be more than fair in my presentation of the facts.

Senator POMERENE. Mr. Davies, I want to call your attention to another feature of this case which, more than anything else, has prompted me to favor some legislation along this line, and that is the effect that this high price of iron and steel is going to have upon the industries of the country; I mean that class of industries which uses iron and steel for their raw material, and if your studies have covered that branch of the question I should be glad to have your views respecting it.

Commissioner DAVIES. Senator, it is very apparent that these high prices and the projected coming into the market of the United States as a big buyer are going to have a very serious effect upon the general manufacturing interests of the country; indeed, it is not only upon the manufacturing interests but upon the consuming public, because where a man buys steel for the purpose of manufacturing, in many situations he passes his cost on to the consumer. A manufacturer of stoves, the other day, when he came up and complained to us, made this statement: That he was a large manufacturer of stoves and had four or five hundred men in his employ; that he had been buying pig iron for $50 a ton but could not get any contract at all at any price for his requirements for the next four months.

He stated that he could get the pig, but the price would be open—he could not get any price to be determined by the people furnishing the pig iron. He said, "I have to make my price list based on the price I pay for pig; when I send a man out to the retailer, for the purpose of selling stoves, he must be able to quote him the price." He said, "I do not care what the cost of pig is, I can translate it into the cost and make the consumer pay for it, but I must have the price of pig fixed; I do not care whether it is $50 or $75, I will add it on to the price of my stoves."

If he can get the pig iron, its cost does not concern him very much, unless he is under contract to deliver in the future at a certain price.

Senator CUMMINS. But there are certain consumers to whom you can not pass on the cost so quickly—certainly, this increased cost. Take the man who is putting up a big building. He finds that the structural steel has advanced from $35 to $40 a ton to $140, and he does not build. He can wait. Again, take the case of a county or municipality that is about to put up new bridges, and they take account of the increased cost of material, and they conclude to build no new bridges, and make the old ones last for another year.

These are but examples of tens of thousands of instances in which progress and construction and development have practically ceased in this country, according to my observation.

Commissioner DAVIES. Yes, sir; that is undoubtedly true. There is one factor that I think should be suggested in answer to Senator Pomerene's suggestion, and that is one, I think, we have given a great deal of thought to, and that is the condition that the industrial part of our country is going to find itself in after this five or six million tons of steel has been taken out of the market by the Government. If a price is fixed by agreement with the Government for Government use—because, as I understand, the general concensus of opinion is now that the Government has power to fix the price of steel and other commodities for Government purchase, but it is questionable whether under present law there is any power in the President of the United States to fix the price of steel for the general domestic consumers and private industries—if the price is fixed for the Government, unless provision is made, the situation will be aggravated as to the general public, because, with five or six million tons taken out of the market, there will be a less supply available; the demand will be just as keen or intensified, because a large amount of the supply is going into new channels; and we fear that prices will mount still higher, not because of any disposition of the steel makers to crowd up the prices, but because of the fact that the

buyers will go in and bid against each other to get the steel, and will bid any price to get the steel, and force the price up.

If a situation develops where the Government fixes the price for steel and fixes it by agreement, so that it will extend to the benefit of the public as well as the Government, a question then arises as to whether any such agreement will stand up under the economic pressure of buyers who will be bidding against each other, in the absence of legislative power and authority to make it effective; that is to say, we found in the news-print situation, where we entered practically into an agreement with them, that we would arbitrate the price of news print and would distribute the paper and fix the price, that after the price was fixed at $2.50, which was a fair price, and after a large proportion of the manufacturers had agreed with us to abide by that price to the general public, we found that a certain portion of them—a small minority—would not come in and they proceeded to sell their paper at just as high prices as the market could give, and they could sell it all. It was, therefore, quite natural for a man to say, "I am willing to be a patriot, but not a goat, and if this man is going to make a fortune for his family, because he does not consider the public interest, why should I hold the price down to $2.50?"

That, in part, and principally because we lacked the power and authority to enforce the agreement, resulted in a failure, to the extent it was a failure, in that news print paper situation. So, with steel, I fear that if any voluntary agreement is made to protect the public on the same basis as the Government is protected, as to the price, the economic pressure, and the pressure of human nature will disintergrate that, in a short time, and bring about still higher prices for the public. I think we are all in accord, in the commission, on the proposition that to bring any substantial permanent relief to the public on prices of this kind, that it is necessary that some agency should be clothed with power and authority to make their determination effective, so as to bring relief to the general public.

Senator Pomerene. I want to follow this inquiry just a little further. A moment ago you made the statement that some manufacturer had said that he could pass on the cost to the consumer: that he was more interested apparently, from your statement, in stabilizing the prices than to know exactly what the price was—more interested in stabilized prices than in lower or higher prices. I have a letter from the Taplin-Rice-Clerkin Co., of Akron, Ohio, who are very large manufacturers of stoves, furnaces, and ranges, and Mr. Clerkin, who signs the letter, gives prices here of his raw material for 1915 and 1917. For instance, pig iron, 1915, $15 per ton, and in 1917, $52 to $55 per ton; galvanized iron, in 1915, $54 per ton; in 1917, $220 per ton; planished iron (range stock) in 1915, $62 per ton; in 1917, $240.

In discussing the effect of this he says—and I am going to ask permission to put this entire letter in the record [reading]:

How will the business interests of the country be kept running full blast to keep the noncombatants, employees, and producers unless the manufacturers can sell their finished product at reasonable prices, if prices are prohibitive? How can they do this? People will not buy. In our own case we are obliged to name prices that we consider almost prohibitive and beyond the reach of the wage earner to pay for by reason of ourselves being obliged to pay so much for the raw product.

And another paragraph here, that is very interesting as bearing upon this same subject, is this [reading]:

Why were they [meaning the railroads] refused their 15 per cent increase on freight rates? I believe the Interstate Commerce Commission decided that their earnings of the past year did not justify additional toll from the public. This is good argument, and I appeal to you that you apply the same argument against the metal, coal, and coke companies as was used against the railroad companies, etc.

And it presents the situation so forcefully of those manufacturers who are dependent upon iron and steel for their raw material that I feel justified in inserting this letter into the record, and my thought was that what he says there with respect to the manufacturers of furnaces and stoves in reference to the increased cost of their raw material will apply to every other manufacturing industry which is dependent on iron and steel, as, for instance, the manufacturers of agricultural implements, of hardware specialties, the manufacturers of tools, and other like articles, and it was because of that fact that I felt vastly more interested in the subject of price fixing than for any other reason.

Commissioner DAVIES. I know that Commissioner Murdock——

The CHAIRMAN. Have you finished your statement?

Commissioner DAVIES. Yes, sir. I think Commissioner Murdock has given a great deal of thought to this matter, and perhaps a statement from him would be interesting.

Commissioner MURDOCK. Senator, it is lunch hour, and I could not add anything to what Mr. Davies has said. He has said it excellently; and if I may be permitted a single word, I would say that I wish to convey the impression—which I have gained during the last few days I have been on the Trade Commission—to the Senators that this situation is going to become increasingly difficult because of the Government demand for a rather fixed steel supply, in that it is going to affect disadvantageously in increasing degree the private purchasers of steel, and the sooner action can be had to remedy that situation the better, and I think it takes legislative action for that.

Commissioner DAVIES. There is one suggestion with reference to the form of the resolution that Mr. Fairchild has suggested to me, and I wish Mr. Fairchild could state that——

Senator POMERENE. If we are going into the legal features of that, had we not better adjourn for the lunch hour?

Senator CUMMINS. I think so. There is a good deal on the question, on the matter of the form these powers should take; whatever powers we may give.

Senator POMERENE. Mr. Davies has testified with respect to the cost of production of iron ore and, as bearing out his statements, I would like to have the views of the iron and steel men themselves in the record. I have here a prospectus issued by the Bird Coal & Iron Co., with offices at 206 South Wabash Avenue, Chicago, Ill., and with plant at Talladega, Ala. Mr. Bird is described here as a man who has had very large experience in the iron business in Ohio, at various mills at Ironton, Ohio, and here is his letter, in which he is soliciting the sale of stock, etc., and he says in this correspondence that pig iron can be produced at from $12 to $14 a ton.

Senator CUMMINS. What date is the letter?

Senator POMERENE. It is in June, July, and August of this year. There are several of them here, and I want to introduce these several letters.

(The correspondence referred to above is here printed in full, as follows:)

[Bird Coal & Iron Co. Coal, coke, iron ore, pig iron. Blast-furnace ore and coal. Mines and coke ovens located at Talladega, Ala. Address reply to the company at 206 South Wabash Avenue, Chicago.]

JUNE 20, 1917.

E. C. MERWIN,
Massillon, Ohio, June 23, 1917.

GENTLEMEN: You know of the tremendous profits being made in the production of pig iron, because you are paying a higher price for it to-day than ever before, and because you have bought pig iron at a cost of from one-fourth to one-third of what you are now paying for it.

You can participate in the profits now being made in this business by being a part owner of the business and besides have the advantage of *always being able to get deliveries of pig iron when you want them from the company in which you are interested.*

Thus you participate in two profits—one from the standpoint of part owner in purchasing your raw material free from your own company and the other your normal profit from the operation of your foundry business.

It is very seldom, indeed, that you have an opportunity to get all your original investment back in less than a year and also continue to participate from year to year in the profits which you will receive from time to time from a bonus. The bonus interest which you will receive for nothing will undoubtedly yield you a greater return than the average conservative investment of funds.

Look over the inclosed circular carefully and confirm the statements we make. Any commercial agency will give you a report that will verify the basic facts underlying our proposition. The proposal is this:

We are issuing $100,000 7 per cent preferred stock, retirable during 1918, at a premium of $25 per share, or $125. You can buy the preferred stock at par to-day, and with each share of preferred that you buy we shall permit you to buy a half share of common stock for $25, or just one-half its par value.

We purpose to take up the preferred stock during 1918 at $125, which gives you back all your money, and you retain your half share of common stock, which will assure you a permanent interest in the business and a continuous participation in the profits of operation.

Having purchased foundry iron for as low as $12 or $13 a ton during the past 12 months, you know that there must be a tremendous profit in it at the present market price of approximately $40 a ton. On a production of 6,000 tons a month—the capacity of our furnace, which will be ready to go in blast within six or eight weeks—you can easily figure what the profits will be when we can produce the iron for approximately $10 a ton and sell it at $40 a ton. A profit of $150,000 a month is well within reason, and on a capitalization of $1,100,000 will be in excess of 100 per cent profit on the entire issue of common stock of $1,000,000.

Are you in the market for iron now?

Would you like to come in with us and participate in the profits?

We expect that this issue will be taken up quickly. First come will get the earlier maturities with return of money that much sooner.

We should like to hear from you in any event, and are inclosing a blank form of subscription, which you may send in at once, and we will hold it for 10 days, subject to any investigation you may care to make, with the understanding that, if the facts are not in strict accordance with the inclosed folder, you may withdraw your subscription at once.

If you prefer, you may wire at our expense and follow the subscription by letter, and it will be entered in the order in which it is received.

Let us hear from you at once.

Very truly, yours.

BIRD COAL & IRON CO.,
GLEN C. BULL,
Vice President and Treasurer.

P. S.—Liberty bonds will be taken at par.

JULY 9. 1917.

THE BIRD COAL & IRON CO.,
Chicago, Ill.

GENTLEMEN: We have your several circulars concerning stock in the Bird Coal & Iron Co.; and while we are interested in a definite source of supply, owing to the fact that we use about 20,000 tons of pig iron per annum, we feel that your estimate of profit is rather too high under present conditions. It hardly seems reasonable to us that iron can be made for $12 per ton when the asking price for coke runs from $12 to $15 per ton at Connellsville. Of course, if no allowance is made for the value of the coal and ore lands and only the charge of manufacturing is figured on—that is, simply the cost of labor in the manufacture of pig iron—then the apparent profit would be very satisfactory.

Can you send us a more detailed report showing the output of the furnace under present conditions, what you expect to make after the improvements have been made, as well as the cost under normal conditions prior to the war and at the present with the increased price of labor?

The writer had hoped to be in Chicago and had expected to stop in to see you, but was called East, and it is impossible now to say when the Chicago visit will be made.

If you can give us a more detailed and definite idea of the output and cost—that is, showing how the cost is figured, whether the value of the coal and ore lands is considered as part of the investment, as well as overhead expenses—we will appreciate it very much.

Thanking you in advance for the favor of an early reply, we are,

Yours, respectfully,

THE C. S. BELL CO.,
By C. E. BELL, *President.*

[E. J. Bird, president. Glen C. Bull, vice president and treasurer. F. T. McKay, secretary. Bird Coal & Iron Co., producers of pig iron, coal, and coke. Furnace, Talladega, Ala. General offices, Chicago, Ill. Reply to this communication should be addressed to the office at Chicago.]

AUGUST 7, 1917.

Mr. C. E. BELL,
President the C. S. Bell Co., Hillsboro, Ohio.

DEAR MR. BELL: The writer has been out of the city for the past month and has just had an opportunity of answering your letter of July 9.

I note what you say regarding our estimate of profits. As stated in our circular, we have our own coal and our own ore. Our only cost is labor cost. It is true that in our calculations we did not write off anything for depreciation of raw material. We did not do this for the reason that we have sufficient red and brown ore to take care of our requirements for perhaps a generation or more and coal sufficient for at least 15 or 20 years.

In other words, we were trying to present in this circular our ability to repay the money secured on our preferred stock issue, thinking that security of the investment took preference over anything else in the investor's mind, which it should.

It is impossible for me to send you a more detailed report showing output of this furnace prior to its rehabilitation. We have increased the capacity of the furnace very materially, and on the percentage of metallic iron in the ore which we will use, we feel very confident that our capacity will be 6,000 tons a month, or 209 tons a day. The stack is 17½ feet by 80 feet, and by using a mixture of ores that will run approximately 44 per cent of metallic iron, we feel that 200 tons will not miss it very much.

This is the opinion of our president, Mr. E. J. Bird, who has had 25 years experience in making pig iron and who, during that time, has been unusually successful.

We figure our labor cost per ton of iron at $2. We figure mining our brown ore for from $1 to $1.25, which will be very materially reduced as soon as the steam shovel is in operation, which will be within the next week or 10 days, and that our red ore can be mined and put on the cars for less than $1.25. We are putting coal on the cars for less than $1.25 a ton, to which should be added 38 cents for freight. It takes 1½ tons of coal for 1 ton of coke, and we expect to use 1.33 tons coke for each ton of pig iron produced.

These figures will enable you to arrive at a cost considerably under $15.

As you know, the price for iron the last half of this year and the first half of next is in excess of $45, f. o. b. furnace.

I should like very much to have you drop in and see me any time you come to Chicago. Perhaps we could figure out something that would interest you very much.

I shall also be glad to hear from you further.

Very truly, yours,

GLEN C. BULL,
Vice President and Treasurer, Bird Coal & Iron Co.

The CHAIRMAN. I wish to inquire if there is anybody here who wishes to appear on behalf of the steel or iron-ore interests? If not, we will take a recess until half past 2.

(Whereupon a recess was taken until 2.30 o'clock p. m. of the same day.)

AFTER RECESS.

The hearing was resumed at the expiration of the recess, at 2.30 o'clock p. m., Hon. Francis G. Newlands presiding.

The CHAIRMAN. Mr. Fairchild, we will be glad to hear from you as to the form of the proposed legislation.

STATEMENT OF MR. ARTHUR W. FAIRCHILD.

Mr. FAIRCHILD. I regret, Mr. Chairman, that I did not know until this morning of the meeting, and, therefore, what little I have to say may not be said in a very orderly manner.

The CHAIRMAN. Will you first please state your occupation and residence?

Mr. FAIRCHILD. I am an attorney at law, from Milwaukee, now with the Federal Trade Commission, in special work which has had to do, to some extent, with the steel investigation and matters incidental to it.

The question which Mr. Davies had me particularly examine I am not sure concerns this committee or concerns Congress so much as it does the executive department, but it might be well if the committee had before it that question in framing the law.

Considerable doubt has been expressed by lawyers, particularly those who have given the matter any thought, as to the effect of the fifth amendment upon legislation of this kind; that is, that part of the fifth amendment which requires the payment of just compensation for private property taken for public use. The query has been made as to what will be the result if the Government should see fit to take over the steel plants or should see fit to commandeer, by process provided in the law, viz, the creation of a buying and selling agency, all the output of a plant, buying it for the Government and reselling it again. Let us suppose, for instance, that under the Lever Act the Government should see fit to take over the coal output of the country and distribute it by purchasing and selling agencies, which say to the owners of the mines, "We will pay you $2 per ton for your coal," and the coal should be purchased at that price and resold at that price plus a margin of profit. Query: May the producer with any reason claim that this $2 does not represent an adequate compensation in the light of the existing conditions? Can he say, "We had a market for our coal at very much higher prices;

we had a demand far exceeding the supply; we had economic conditions which would doubtless result in still higher prices, and the Government has paid us only $2 for our coal. We are entitled to the difference"? In other words, is there a question or a possibility that the Government may be called upon, at the end of the war, to pay to the owners of the plants, or the owners of property commandeered, a much larger amount than the price which has been fixed by the Executive?

There are, of course, two pertinent powers of government: there is the national police power, or perhaps more properly the war power, and the power of eminent domain which permits, in the one case, an impairment of property and even its destruction for the common good, and the other which permits the Government to take it for its own use upon payment of an adequate price. Police power and the power to take have been, through all the cases, very clearly differentiated. If the exercise of power is the exercise of a police power, which seems akin to the war power, it may result in great impairment of property and may result, in cases, in total destruction of property, but for that impairment or destruction the Government is not obliged to recompense. On the other hand, if the Government "takes" property and appropriates it to its own use, then, under the fifth amendment, it is obliged to pay just compensation.

So, the question is, for the executive, primarily, and not for the legislative department. What steps may be taken without complicating the situation; without injecting into it further than necessary the possibility of the Government later being obliged to pay larger sums than the sums fixed for the property and plants.

Under this act, as I view it, there are four possible methods which may be employed: First, the price-fixing method; second, the regulation method—regulation of production, distribution, and apportionment; third, the commandeering of plants upon paying a fair rental; and fourth, the purchase of the output, really a pooling of it, and the resale to the public generally.

Briefly, I may say that it has seemed to me, with such short consideration as I have been able to give it, that price fixing and regulation would not be deemed a "taking" of property under the fifth amendment; that it would be, assuming the exigency, within the power of the Government to fix the price and to regulate the production and shipment and distribution and apportionment of products without taking the property in a constitutional sense.

On the other hand, if the Government should see fit to actually commandeer the plant, or actually commandeer the output, then it would seem a taking, under the Constitution, which would require just compensation. Of course, in estimating that just compensation, if the Government should see fit to adopt either of the two latter courses, there must, if the rules applicable to eminent domain should obtain, probably be taken into consideration all of the elements that enter naturally into a determination of an adequate compensation. On the one hand, there would be the present high prices, the over-demand, or demand exceeding the supply, and the possibility or probability of future enhanced prices; but, on the other hand, there should be taken into account the economic exigency, the possibility of a disruption of the industry, because of these war conditions, and the whole possible ultimate effect of these conditions upon the in-

dustry which, of course, in the end but for the Government action, might result in disaster to it.

So, I take it, that if, short of confiscation, an administrative officer or designated board should fix a compensation, a court would be very loath to alter that finding, because the weight which must be given this or that element is one of fact or mixed law and fact, and the court ordinarily does not modify a finding which is based upon a disputed fact. But the question is there nevertheless, and the executive officer or board will naturally wish to avoid it. Therefore, in preparing this bill it would seem important to have the powers, short of taking of property, very accurately defined and given.

I think it is recognized—I am merely speaking personally, and not at all as representing the commission or anybody else—I think it is recognized that if results can be obtained by price fixing or by regulation those methods will be adopted before the Government will either commandeer the plant or use the power which is given to turn over to an agency all of the product for resale to the public. If that be true, then, it is quite important that the bill should give the broadest possible power to the Executive and the agency through which he acts to regulate the production, shipment, distribution, and apportionment of these products. A cursory reading of the bill would seem to me to leave some doubt as to whether that power is broadly enough expressed. You will notice on page 4 that it gives the power to establish rules for the regulation of and to regulate methods of production, sale, shipment, distribution, apportionment, or storage thereof among dealers and consumers, domestic and foreign, etc. I wish to suggest whether it would not be advisable to eliminate the words "methods of" so that it would read "to regulate the production, sale, shipment, distribution, and apportionment," etc. In other words, the regulation of merely the methods of distribution and apportionment might not give a sufficient power to direct priority. It is a limiting phrase, which seems to add nothing and perhaps unwisely limit the power conferred. My personal view is that the important thing is to place the Government in a position to direct where products shall go and at what prices.

Senator Cummins. Mr. Fairchild, as I have read the bill, it seems to me your suggestion would apply to some other part of it more directly than to the language you have read on page 4. That part of the bill, beginning at the bottom of page 3, contemplates that the Government has become the owner of all the whole product, and this "to regulate the methods of production, shipment, distribution, apportionment, or storage thereof," etc., contemplates a distribution of the Government's own product.

Mr. Fairchild. Senator, you are entirely right. I should have said page 2 instead of page 4. The same language is used at the top of page 2. There the language is, "To regulate the method of production, sale, shipment, distribution, apportionment, or storage," etc.

You are entirely right; but the same considerations would apply. There should be the broadest powers of priority, a power to direct where the product shall go and at what price; and it would seem to me that the words "method of" might limit, perhaps, that power.

There is another thing that occurred to me: This bill, of course, is fashioned after the Lever Act, and that act provides for the taking over of plants and businesses of coal producers. The steel in-

dustry differs, of course, radically from the coal industry, in that there are so many different products of the industry, and the industry is integrated to such an extent that it really, in certain instances, is a combination of a very large number of different industries into one. The language of the bill, as it stands, might be taken as requiring the commandeering of the whole plant and business of any given company, if any is to be commandeered. I can conceive of a case where the Government might desire to take over perhaps only a small portion of the plants or business of particularly a highly integrated company, and my suggestion would be to broaden out the power conferred by inserting in line 19, at page 2, after the word "appurtenances," the words "or any part," so that the Government might take over one branch of a particular company instead of being required to take over the entire thing.

In that same connection, there might be on hand stores of property—accumulated stores of a product—semifinished and finished. If the word "property" were inserted after "business," it would seem to me to strengthen the act.

Senator Pomerene. What line is that?

Mr. Fairchild. Line 19, after the word "business."

Senator Cummins. Page 2?

Mr. Fairchild. Yes.

Senator Pomerene. What was your suggestion?

Mr. Fairchild. Insert, after the word "business" the words "or property."

Senator Pomerene. Is not that included in the word "plant"?

Mr. Fairchild. I do not know; there might be a quibble over it. It is possible that it would include stored property, but I am not sure that it would, particularly in a case where property might not be stored at the plant.

Those changes require numerous changes throughout the body of the act. It would take too long to point them out. Perhaps I could hand to the chairman a copy of the bill with interlineations, so as to show what I had in mind.

The Chairman. If you will do that, we will insert it in the record.

Mr. Fairchild. I shall be glad to do it.

(The copy of the bill referred to is as follows, the proposed changes appearing in italics:)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That by reason of the existence of a state of war it is essential to the national security and defense for the successful prosecution of the war and for the support and maintenance of the Army and Navy to assure an adequate supply and equitable distribution at reasonable prices and to facilitate the movement of iron *ore*, iron, steel, and their products, and because thereof the President of the United States shall be, and he is hereby, authorized and empowered, whenever and wherever in his judgment necessary for the efficient prosecution of the war and for the purposes aforesaid, to fix the price of iron ore, iron, steel, and their products wherever and whenever sold, either by producer or dealer, to establish rules for the regulation of and to regulate the ~~method of~~ production, sale, shipment, distribution, apportionment, or storage thereof among dealers and consumers, domestic or foreign. Said authority and power may be exercised by him in each case through the agency of the Federal Trade Commission during the war or for such part of said time as in his judgment may be necessary.

That if, in the opinion of the President, any such producer or dealer fails or neglects to conform to such prices or regulations, or to conduct his business efficiently under the regulations and control of the President as aforesaid, or conducts it in a manner prejudicial to the public interest, then the President is hereby authorized

and empowered in every such case to requisition and take over the plant, business, *or property*, and all appurtenances *or any part* thereof belonging to *or operated by* such producer or dealer as a going concern, and to operate *and handle* or cause the same to be operated *and handled* in such manner and through such agency as he may direct during the period of the war, or for such part of said time as in his judgment may be necessary.

That any producer or dealer whose plant, business, *property*, and appurtenances shall have been requisitioned or taken over by the President shall be paid a just compensation for the use thereof during the period that the same may be requisitioned or taken over as aforesaid, which compensation the President shall fix or cause to be fixed by the Federal Trade Commission.

That if the prices so fixed, or if, in the case of the taking over or requisitioning of the plant, business, *property*, and the appurtenances, *or any part thereof*, of any such producer or dealer, the compensation therefor as determined by the provisions of this Act be not satisfactory to the person or persons entitled to receive the same, such person shall be paid seventy-five per centum of the amount so determined, and shall be entitled to sue the United States to recover such further sum as, added to said seventy-five per centum, will make up such amount as will be just compensation in the manner provided by section twenty-four, paragraph twenty, and section one hundred and forty-five of the Judicial Code.

While operating *and handling*, or causing to be operated *and handled*, any such plants or business and appurtenances thereof, the President is authorized to prescribe such regulations as he may deem essential for the employment, control, and compensation of the employees necessary to conduct the same.

Or if the President of the United States shall be of the opinion that he can thereby better provide for the common defense and the purposes aforesaid and whenever, in his judgment, it shall be necessary for the successful prosecution of the war, then he is hereby authorized and empowered to require any or all producers of iron ore, iron, steel, and their products in any section of the United States, or in the entire United States, to sell their products *or designated portions thereof* only to the United States through an agency to be designated by the Pressident, such agency to regulate the resale of *and to resell* such iron ore, iron, steel, and their products *or designated portions thereof* and *to regulate and fix* the prices thereof, and to establish rules for the regulation of and to regulate the ~~methods of~~ production, shipment, distribution, apportionment, or storage thereof among dealers, consumers, domestic or foreign, and to make payment of the purchase price thereof to the producers thereof, or to the person or persons legally entitled to said payment.

That within fifteen days after notice from the agency so designated to any producer of iron ore, iron, steel, and their products that his or its output *or portions thereof* is to be so purchased by the United States as hereinbefore described, such producer shall cease *sales or* shipments of said product upon his own account and shall transmit to such agency all orders received and unfilled or partially unfilled, showing the exact extent to which shipments have been made thereon, and thereafter all shipments shall be made only on authority of the agency designated by the President, and thereafter no such producer shall sell any of said products except to the United States through such agency, and the said agency alone is hereby authorized and empowered to purchase during the continuance of the requirement the output of such producers.

That the prices to be paid for such products so purchased shall be based upon a fair and just profit over and above the cost of production, including proper maintenance and depletion charges, the reasonableness of such profits and cost of production to be determined by the Federal Trade Commission, and if the prices fixed by the said commission of any such product purchased by the United States as hereinbefore described be unsatisfactory to the person or persons entitled to receive the same, such person or persons shall be paid seventy-five per centum of the amount so determined and shall be entitled to sue the United States to recover such further sum as added to said seventy-five per centum will make up such amount as will be just compensation in the manner provided by section twenty-four, paragraph twenty, and section one hundred and forty-five of the Judicial Code. All such products so sold to the United States shall be sold by the United States at such uniform prices, quality considered, as may be practicable and as may be determined by said agency to be just and fair.

Any moneys received by the United States for the sale of any such iron ore, iron, steel, and their products may, in the discretion of the President, be used as a revolving fund for further carrying out the purposes of this section. Any moneys not so used shall be ~~covered~~ *paid* into the Treasury as miscellaneous receipts.

That when directed by the President, the Federal Trade Commission is hereby required to proceed to make full inquiry, giving such notice as it may deem practi-

cable, into the cost of producing under reasonably efficient management at the various places of production the following commodities, to wit: Iron ore, iron, steel, and their products.

The books, correspondence, records, and papers in any way referring to transactions of any kind relating to the mining, production, sale, *shipment* or distribution of all producers or other persons whose iron ore, iron, steel, or their products have or may become subject to this act, and the books, correspondence, records, and papers of any person applying for the purchase of iron ore, iron, steel, or their products from the United States shall at all times be subject to investigation by the said agency, *and* such person or persons shall promptly furnish said agency any data relating to the business of such person or persons which said agency may call for, and said agency is hereby authorized to procure information with reference to the business of such producers and the customers therefor in the manner provided for in sections six and nine of the act of Congress approved September twenty-sixth, nineteen hundred and fourteen, entitled "An act to create a Federal Trade Commission, to define its powers and duties, and for other purposes," and said agency is hereby authorized and empowered to exercise all the powers granted to the Federal Trade Commission by said act for the carrying out of the purposes of this act.

Having completed its inquiry respecting any commodity in any locality it shall, if the President has decided to fix the prices at which any such commodity shall be sold by producers and dealers generally, fix and publish maximum prices for both producers and of dealers in any such commodity, which maximum prices shall be observed by all producers and dealers until further action thereon is taken by the commission.

In fixing maximum prices for producers the commission shall allow the cost of production, including the expense of operation, maintenance, depreciation, and depletion, and shall add thereto a just and reasonable profit.

In fixing such prices for dealers the commission shall allow the cost to the dealer and shall add thereto a just and reasonable sum for his profit in the transaction.

~~The maximum prices so fixed and published shall not be construed as invalidating any contract in which prices are fixed, made in good faith prior to the establishment and publication of maximum prices by the commission.~~

Whoever shall, with knowledge that the prices of any such commodity have been fixed as herein provided, ask, demand, or receive a higher price, or whoever shall, with knowledge that the regulations have been prescribed as herein provided, violate or refuse to conform to any of the same, shall, upon conviction, be punished by a fine of not more than $5,000 or by imprisonment for not more than two years, or both. Each independent transaction shall constitute a separate offense.

Nothing in this section shall be construed as restricting or modifying in any manner the right the Government of the United States may have in its own behalf or in behalf of any other Government at war with Germany to purchase, requisition, or take over any such commodities for the equipment, maintenance, or support of armed forces at any price or upon any terms that may be agreed upon or otherwise lawfully determined.

Mr. Fairchild. There is one other thing that occurs to me, and that is, what is meant by the phrase, "iron, iron ore, steel, and their products." Of course, that is a broad designation, and probably it would include products fabricated down to the last point of fabrication. There are numbers of steel products, I am informed, that are combination products. Take, for instance, galvanized products, or tin plate, where the base is steel, and it is in combination with other products. What is the intention of the act with respect to them, and is there some designation that could be made that would make the intent of the act clear as to just what is meant?

Senator Kellogg. I would like to ask you, while on that subject, a question. There are literally thousands of small concerns over the United States that manufacture every conceivable thing in which iron enters into their construction. Do you think it advisable for the Government to take over all those concerns and fix the price——

Mr. Fairchild. I would not be prepared to say that, and that is why I am raising the query as to whether iron ore, iron, steel, and

their products might not go much further than the committee may desire to go.

Senator Kellogg. I doubt if there is a village in the country of 10,000 people which has not a number of manufactories producing small iron products.

Mr. Fairchild. That is undoubtedly true.

Senator Cummins. There must be a distinction made, however, between giving the power and its exercise. It would be pretty hard to differentiate in giving the power. It would be very easy for the Executive to exercise only a part of the power which has been given to him. I think myself the effort to fix the prices of all things that are made from steel or from iron and steel would be absolutely impossible.

Senator Pomerene. The purpose was to simply confer this power upon the President and let him exercise it whenever he saw fit to exercise it—when the situation might require it.

Senator Kellogg. There are certain products of pig iron, bar iron, and steel of the large manufacturers that make the prices throughout the country, but there are literally thousands of fabricated iron articles of all kinds, from malleable plants to little stove plants, into which iron goes, and as to which it is the principal raw product, and it is perfectly useless for the Government to hope to buy them up——

Senator Cummins. Blacksmith shops, etc.

Senator Kellogg. Yes.

Senator Cummins. It is not to be expected that we should enter into that field.

Mr. Fairchild. That is all I have to say, I think, Mr. Chairman. I shall be glad to go over the bill and make such suggestions as occur to me.

Senator Pomerene. You have suggested a question which has troubled me a great deal, about the so-called power of eminent domain and the police power, and you have indicated certain things which may be done under the police power and tried to distinguish between what might be an exercise of the police power and an exercise of the power of eminent domain, and, as I understand you, you have said that the fixing of prices was not a power of eminent domain. I assume that you meant to classify that as a part of the police power, under this bill.

Mr. Fairchild. I am not referring to the fixing of prices for products that the Government takes for its own use.

Senator Pomerene. I understand.

Mr. Fairchild. I am speaking of a general price fixing.

Senator Pomerene. Has that matter been the subject of adjudication in this country at all?

Mr. Fairchild. It has not, so far as I know, Senator.

Senator Pomerene. Has it been the subject of adjudication in the Engilsh courts, as far as you know?

Mr. Fairchild. I do not know. Of course I have not given it an exhaustive study, but it would seem, on theory, that where the Government does not get for its own use the property to which the act applies it would not be a taking of the property; it would be only an impairment of the value or depreciation of the price, incident to the exercise of the power for the public interest.

Senator POMERENE. Then you would regard this exercise of the police power—assuming that it is a police power—as an incident to the commerce clause or the interstate commerce of the country?

Mr. FAIRCHILD. I do not know that I understand you.

Senator POMERENE. Congress is given the power to regulate commerce among the States and the Indian tribes and with foreign countries. Now, is it in that connection that you find the police power?

Mr. FAIRCHILD. No more in the line of what you might call the war power—the power to provide for the national defense.

Senator POMERENE. You would defend this, then, on the same ground that we would defend the right to fix the price of a loaf of bread in the event that the conditions were such that, in the judgment of Congress and the President, that became necessary.

Mr. FAIRCHILD. Yes, sir; that is correct.

Senator KELLOGG. In the absence of the war power in times of peace, you would not claim that the police power extended to that?

Mr. FAIRCHILD. No, sir; perhaps the words "police power" are inadvisedly used, but it is the power of the Government in this exigency.

Senator KELLOGG. The power of the Government to fix prices has been sustained since the earliest days of the English Government, but the power of the Federal Government to fix prices is another proposition.

Senator CUMMINS. That deserves a little further inquiry, I think.

Mr. FAIRCHILD. Oh, the subject has just been touched.

Senator CUMMINS. It is one in which the whole field has bothered me a great deal. We put aside, now, the commerce clause of the Constitution. Congress has a police power, of course, growing out of that authority, and has directly the power to regulate commerce, and that extends to the fixing of prices. But this bill is not bottomed on that clause in the Consitution, because it applies to all commodities, whether carried in interstate commerce or not. We must find some other power, therefore, upon which to rest this legislation. I assume there is no other power except the so-called war power. There is no police power incidental to the war power, I think, because the war power is all embracing, is comprehensive, and then we are brought to this conclusion, that we have reached a point where we believe the national defense, the safety of the country in time of war, requires that the Government shall do one or the other of these things—either fix the price, regulate transportation and production, or take the property itself.

What do you understand is the application of the fifth amendment to the Constitution to the war power?

Mr. FAIRCHILD. You might be interested in reading Judge Hughes' article on the war power as applied to the Constitution, which was delivered before the American Bar Association a few days ago and printed in the Record.

There are certain war powers, as I understand it, in the light of which the Constitution was adopted, and which are not affected by certain of its provisions—at any rate in the light of which they must be read. If it were not so, you could not conscript anyone for the Army, nor could you shoot a rebel, when caught, or do a great many

other things, unless the war power were inherent in government, and not affected by certain provisions of the Constitution. So, it is a very large question as to what war powers are superseded or affected by these amendments or provisions of the Constitution, and what are not.

It has been held that in the realm of actual military operations, for instance, the property of a loyal citizen of the Government may be taken and appropriated and not even paid for.

Senator KELLOGG. And destroyed.

Mr. FAIRCHILD. Yes; and destroyed and not paid for. That is because the amendment to the Constitution is read in the light of the war power which existed at the time it was enacted, and which is inherent in government and necessary for its protection and safety, and after the Civil War there were a number of cases where the property in the South of loyal citizens of the North was destroyed, and in others taken. In other wars the same thing occurred as when Gen. Jackson took cotton at New Orleans.

Senator KELLOGG. Then Senator Cummins' statement is correct, that the fifth amendment has nothing to do with it?

Mr. FAIRCHILD. To that extent it is true.

Senator CUMMINS. You have suggested that there is more danger from the constitutional standpoint in attempting to exercise the power of taking the property at a price that the Government may determine to pay for it than in fixing the price at which the owners shall sell the property. Now, I am unable to see that because either one is the exercise of a war power, and if the Government fixes a price that is inadequate, and the fifth amendment to the Constitution applies, it seems to me that it is just as fatal as if the Government took the property itself and fixed an inadequate price.

Senator KELLOGG. I am inclined to think you are right. What we are coming back to, in this price fixing is, are these staple articles, reasonably necessary in the prosecution of the war. If they are, we have the power, and if they are not, we have not.

Senator CUMMINS. I recall we were in consideration of another bill which had more direct reference to the war, and Gen. Crowder, whom I regard as a very excellent lawyer, stated, as I understand him—and he read several authorities to prove it—that it was within the power of the United States, in making war or defending itself against war, whether in the scene of military operations or without the scene, to take property without making any compensation at all for it.

Mr. FAIRCHILD. If he read authorities to that effect, there are, I think, plenty to the other effect.

Senator CUMMINS. I know that.

Mr. FAIRCHILD. That is, if property is taken outside of the actual realm of military operations, not superinduced by an immediate military necessity, the Government must pay for it.

Senator CUMMINS. Of course the Government will pay for it. We need not consider that phase of it.

The abstract question is really academic, but the question that immediately follows it is, I think, pretty well settled. The Government, at the time, fixes the value through some tribunal which it appoints for that purpose. I think the judgment or the conclusion of that

tribunal can be made conclusive, and that there can be, or need be, no review of its action at any future time.

Mr. FAIRCHILD. Do you mean it can be made so by law that property may be actually confiscated?

Senator CUMMINS. I mean that there is not any right of trial in an ordinary court; that the law can constitute a tribunal, for instance, the Federal Trade Commission, and it could say—in my opinion, and that is a thing that I really want your judgment about—the law can say to the Federal Trade Commission, "You shall make an inquiry, giving the owner of the property, of course, opportunity to be heard, and you shall then reach a conclusion or enter a judgment with respect to the compensation which the Government shall make for the property," and that the judgment of any such tribunal shall be final. I think that is a valid law, if it does give the owner of the property——

Mr. FAIRCHILD. His day in court?

Senator CUMMINS. An opportunity to be heard, and the judgment of that tribunal is the law of the land. If we can not proceed upon that theory, why, we are absolutely helpless in this contingency. If we have to look forward to the danger of having all these things opened up before a court and jury in future years, we do not know where we are.

Mr. FAIRCHILD. I think this much is certain, that a judgment of any tribunal that is designated on a question of fact is final.

Senator CUMMINS. Well, it is a combination of fact and law.

Mr. FAIRCHILD. Well, even a combination of fact and law.

Senator CUMMINS. Every judgment is; but the Federal Trade Commission looks into this steel situation. And suppose the Government is considering iron ore or steel or coal, or whatever may be necessary to make those products. The commission says they are worth so much. "We are ready to hear the owner of these things." They do hear the owner, and they say to the Government that just compensation is so and so. Now, I believe that the law can make that judgment absolutely final and protect the people of the country against any of the dangers that have been suggested.

Commissioner DAVIES. Is not the question of compensation a constitutional right, and strictly a judicial question, and would not the question come up as to whether or not the constitutional right of the person to the property that was taken was violated.

Senator CUMMINS. No; the Supreme Court of the United States has held that condemnation proceedings may be had before any tribunal which the law may appoint, and in the absence of any appeal given in the statutes the judgment of the tribunal is final. You have got to give the owner an opportunity to be heard; that is all.

Mr. FAIRCHILD. In other words, the hearing before such tribunal is judicial?

Senator CUMMINS. It is res judicata.

Mr. FAIRCHILD. Now, following out your line of argument, the Supreme Court held, as I recall it, in the Russell case, in Thirteenth Wallace, where a claim was presented before the Court of Claims, that there was no jurisdiction in the Court of Claims, because the law had designated the Secretary of the Treasury as the person to make the determination of damages, and that the remedy was there.

Senator CUMMINS. Well, the Supreme Court held in the Monongahela Navigation Co. case that if the law provided a tribunal—not necessarily a judicial tribunal, an ordinary judicial tribunal, but a tribunal before which the owner of the property could be heard—the demands of the Constitution will be fully complied with.

Dr. WALKER. That meets the fourteenth amendment, the process of law, the law of the land, and it is true of taxation, condemnation, and thousands of other things. It is summary jurisdiction.

Senator CUMMINS. I wish you would look into that matter. That is a question that comes up here every time we attempt to pass any of these war measures.

Mr. FAIRCHILD. I am very willing to do that, Senator.

The CHAIRMAN. You were speaking of the multiform character of the iron and steel business. Why could not every requirement be met by simply taking over the ore, and then by a system of licensing regulate the manufacturers and the dealers in the disposal of the products of that ore?

Mr. FAIRCHILD. The product of the ore; that is all you are doing under the act, is it not? Iron is the product of the ore, as are all of the products that follow iron.

The CHAIRMAN. Would it not simplify it very much to just take hold of the ore, and then to control the price of the products of that ore through agencies licensed for the production and sale of such products?

Mr. FAIRCHILD. Well, the Executive may reach the conclusion that that is as far as he needs to go. The question is whether his power should not be broader, is it not, if the necessity arises?

The CHAIRMAN. No; my suggestion is, would it not meet the entire situation and simplify it very much to merely authorize the President to take over the ore in the mines, or wherever it was, and then to regulate, through a system of licensing, the sale of the product of that ore?

Senator KELLOGG. The products are not made of the ore.

The CHAIRMAN. That is true, but if the Government once obtains the title to the ore itself, it could then fix the conditions upon which the producers could put that ore into shape and put it upon the market.

Senator KELLOGG. You will find that much of this ore belongs to the States. Take Minnesota, for instance.

Mr. WOOSTER. The ore is mined by one company and the plates are produced by another company four places removed. It has passed through four hands before it is turned into plates.

Senator KELLOGG. That is true. The State ore is mined by men who have leases. Those leases are subject to cancellation at any time.

The CHAIRMAN. Is not the main product of the mines in Minnesota the actual property of private corporations?

Senator KELLOGG. Oh, the larger percentage, of course, is—vastly the larger percentage.

Mr. WOOSTER. That would involve the taking over of the ore itself and then have all the very difficult administrative labor of selling this ore, which is of a great variety of grades and qualities, and getting it to each producer and furnace man in the proper quantities and mixtures, etc. It is much easier to fix the price than to do the business for them. That is a practical question.

Senator KELLOGG. It is a very complicated business. It varies as to grades of ore and different qualities, etc. I have not looked into the cost, but I assume that the big price of iron and steel products on the market to-day is not on account of the big price of ore.

Commissioner DAVIES. It is not the high price of ore. You are right.

Senator KELLOGG. The ore has not varied so tremendously.

The CHAIRMAN. But you failed to catch my point, and that is, that it is comparatively a simple process to get possession of the ore. Now you have got it——

Senator KELLOGG. What will you do with it?

The CHAIRMAN. You can part with it upon condition that the party licensed can make a profit out of that ore that you sell them, and shall not charge exceeding a certain price, and you can withhold from persons who disobey the rules any further contributions of ore.

Mr. FAIRCHILD. But suppose you sell ore to a concern that makes only pig iron and enter into an arrangement with it that you will not furnish it ore unless it sells its pig iron at a certain price. Where do you get your control over the subsequent operators? The man who sells pig iron sells to a man who makes billets; the billet man sells to some one who makes the finished product. You have a chain of agreements, and that would have to be worked out, not by reason of the holding of the ore, but all down the line. The administrative difficulties would be tremendous.

Commissioner DAVIES. Mr. Chairman, will you permit me to outline a thought that I have in connection with the matter, which Mr. Fairchild has suggested, as to the form and extent of the power given to the Executive under this act?

As I understand it the preponderance of authority is to the effect that the war power supersedes any protection that the fifth amendment gives to private property, where the destruction of the property is due to military necessity in the actual field of military operations, or where the property is the property of a citizen adjacent to the military operations, and situs gives it a military character. So that property can be taken by the Government and destroyed without compensation. I understand also that it is the weight of authority that where the property of a citizen is not adjacent to the military operations, that if it is then taken, the fifth amendment does apply and just and fair compensation must be paid.

Senator CUMMINS. Can you stop at that point without any embarrassment? I desire to clear a point that is in my mind.

Commissioner DAVIES. Certainly.

Senator CUMMINS. The Government can only take property for public use?

Commissioner DAVIES. Yes, sir.

Senator CUMMINS. What makes it a public use, to take it for the benefit of the people generally?

Commissioner DAVIES. Of course that is again the war power.

Senator CUMMINS. That is arguing in a circle, is it not?

Commissioner DAVIES. Well, perhaps it is.

Senator CUMMINS. It bothers me a lot. I simply wanted to know, and I hope I have not disturbed your chain of thought.

Commissioner DAVIES. No; you have not disturbed my chain of thought, but you have the chain of my conclusions.

I have followed it out in this way, that the Government, therefore, has the power to take property in this exigency by reason of its war power. It might have power over property arising out of its war power not amounting to taking the property, which would be analogous to the police power in connection with power over interstate commerce, but which would impair the value of property just as property value might be impaired by police regulations in interstate commerce, but for which impairment there could be no claim for compensation as there would be if the property were actually taken. That is, that there might be two exercises of the war power; one an actual taking of property, the other only a regulation of its use.

Now, if that is so, then the Lever Act provides practically for three methods—one, the fixing of a flat price for the commodity and the fixing of a maximum price; secondly, the commandeering of the plant; and third, the purchase of all the commodity and its resale.

Now, fixing the maximum price for the property might be held not to be a taking of property, but the regulation necessary in the war to promote the general welfare and promote war efficiency—analogous to the police power exercised by the States, which is not taking the property but which impairs the value of the property.

The pooling or purchase provision of the Lever Act was designed, as I understand it, to permit of an opportunity for the Executive to take and fix a price, not at a flat maximum price, which would operate to give a very high profit to a very low-cost producer and a small profit to the high-cost producer, but to permit the Executive another alternative, to wit, to purchase all the property at varying prices, to pool it, and resell it at an average price which would be less than a maximum price.

Now, the Lever law expressly provides that the Government shall take by purchase. There is then no question of the "taking" of property and perhaps the right of the producer to have his claim for just compensation adjudicated. If there were a provision made for the regulation and control of sale and shipment, which would in effect do the same thing, to wit, pool but not purchase, it might avoid the question of compensation for the reason that there would be no taking but only regulation, analogous to the police power under normal conditions, for which there would be no remedy for the impairment of the value which such regulation to promote the general welfare would impose. This may be largely an academic suggestion. I do not know whether there is value in it or not.

Senator CUMMINS. There may be, but certain parts of your argument I do not understand clearly.

In the first place, the purchase and control under the Lever Act is not a voluntary arrangement. The act requires the owner to sell the output at a price to be determined by the Federal Trade Commission. It is just as involuntary a proceeding as the ordinary condemnation proceeding usually is, and I am in doubt about the matter. I am sure we should have to advance somewhat in our constitutional views in order to sustain it. I believe, however, that every constitutional view is advancing with the necessities of the people.

Now, as to your other point, that the fixing of the price at which the product shall be sold by the producer, or by the dealer, is not a

taking required by the Constitution. It is, in my judgment, merely technical. No matter what the courts have said as to its being a taking of property, the fact remains that if the price fixed is not adequate it is a confiscation and is protected by the fifth amendment to the Constitution.

The Supreme Court has held with regard to the Interstate Commerce Commission that it will not review the facts; that it must appear either that the commission exceeded its authority or that it acted arbitrarily and without any respect to the evidence before it, but all the time bearing in mind that in fixing the compensation that railway companies are entitled to charge for the services rendered; that the railway company is entitled to all the protection of the fifth amendment to the Constitution. That has never been doubted, no matter what may be the opportunity for review, but it provided in that respect that when the Interstate Commerce Commission comes to fix a rate for a railroad company it is bound to regard the fifth amendment to the Constitution and so fix the rate that the property of the company will not be taken without due compensation. It is a very difficult field.

Senator Pomerene. We have drawn this whole bill as an exercise of war power. I want to make this suggestion further with regard to this bill. There is one provision in here with respect to contracts.

Commissioner Davies. Contracts; that is what I have in mind.

Senator Pomerene. I am convinced from my study, not only of this proposition but of the coal and coke proposition, that you have got to give plenary power to the President if he is going to be successful in the administration of this law and bring relief to the public, and I should like to hear what suggestions the Trade Commission has to make with respect to contracts which may now be in operation.

Commissioner Davies. Well, Senator, we are firmly of the belief that the full measure of relief that you expect to bring to the public by this proposed legislation will not ensue, provided bona fide contracts that have been entered into in good faith prior to the fixing of price remain. In the matter of coal, we find that some 75 to 80 per cent of the coal production of the country has been contracted for, apparently in good faith, prior to the fixing of the maximum price——

Senator Pomerene. That is, some of it is in good faith.

Commissioner Davies. Some of it is in good faith and some is not; and we are now investigating it upon the direction of the fuel administrator. That left the coal administrator in a situation where his price control affected approximately only 15 to 25 per cent of the coal—that is, the coal which the domestic consumer and small consumer was using—with the result that the relief that was anticipated did not come, and he is now trying to bring about some change in that situation, as I understand it, by getting some of the contract coal released so as to bring relief to the situation.

Senator Pomerene. Now, I want to interrupt you at that point. I have positive information that a lot of these coal operators are using certain contracts, and they are flexible in character in such way as to persuade if not to enforce contracting parties to take more coal than they really need for the requirements of their business. Other

contracts are being antedated, and the important thing is to get some lawyer busy and prosecute those fellows, and then you will get this relief, and that is the only way it will come.

The CHAIRMAN. Who is to do the prosecuting, the Trade Commission or the Attorney General?

Commissioner DAVIES. We will get the facts, Senator.

Senator CUMMINS. Do you believe we can cancel the outstanding contracts without making compensation?

Commissioner DAVIES. It is the same question, regardless of whether you make compensation or not, Senator. To bring the relief that you expect to bring to the public you must suspend these contracts; and if you desire to bring the relief to the public, and if you have to pay them for it, it is not more than compensation that you would have to pay for property that you take for the Government.

Senator CUMMINS. I do not quite understand the word "suspend." I used the word "cancel." You do not mean that at some future time the contracts are to be revived and be performed, do you?

Commissioner DAVIES. I have used the word "abrogated." It has been criticized as too harsh a word to define an idea, and it has been suggested by some members of the War Industries Board that these contracts might possibly be suspended in operation, to go back after this exigency has disappeared.

Senator CUMMINS. But we will have to go back at the will of the persons who make them. You could not suspend them and then when conditions have changed require either party to perform them, and is it not true, Mr. Davies, that in order to carry on the business of this country properly, and in view of the fact that the buyers of a large part of this fuel are themselves in competition with each other, that they must be able to buy on even terms or they can not compete with each other, or would not compete with each other?

Commissioner DAVIES. That is absolutely correct, and if you have contract prices for pig iron to-day at $54 a ton and the Government should fix a price on pig iron at $25 the man who has been provident and taken care of his wants for the future by entering into a contract for six months will be penalized because the cost of his basic materials are so much higher than those of the man who, perhaps, has not been provident.

Senator CUMMINS. It seems to me that no matter what the consequences may be, if we are going to try to restore business to anything like its normal condition and give everybody an even chance, we must cancel those contracts.

Commissioner DAVIES. I think that is the idea.

Senator KELLOGG. And yet every railroad company buys its nuts, bolts, and plates, and all its iron practically on yearly contracts. Nearly every manufacturer in the country, little and big, buys and sells his product purely on contracts for the year. There is not a great deal of $55-a-ton iron in the country.

Commissioner DAVIES. It is quite remarkable, Senator, the extent at which it has been contracted for at high prices in the last two months.

Senator KELLOGG. $35?

Commissioner DAVIES. $35; but we find frequently in this cost that the cost of metallic mixture runs way up—$54 and $58 in plates, for instance.

Senator KELLOGG. $54 and $58 iron is job-lot iron.

Commissioner DAVIES. It is prompt-delivery iron.

Senator KELLOGG. But very few men have entered into a contract for iron in the next year at $55 a ton.

The CHAIRMAN. Do you refer to pig iron?

Senator KELLOGG. Yes.

Commissioner DAVIES. If you will permit me to say, there are a number who have come to us and said that they have contracts for pig iron at $55.

Senator KELLOGG. A few of them. They are contracted at other prices.

Senator CUMMINS. Is it not true that inasmuch as the cancellation of these contracts would result in not only an equalization of prices, but in a reduction of prices to the buyer, that the only harm, or the only person who would really be entitled to our consideration, would be the seller? It is not going to disturb business any to cancel the contracts, because they will be getting their stuff at a lower price generally, but the person who has made the contract to sell at this high price will have some reason to complain.

Senator KELLOGG. They have all got to do business under a contract system. They can not buy from hand to mouth.

Commissioner DAVIES. That is true.

Senator KELLOGG. The railroads will not buy it.

Commissioner DAVIES. They won't if they can help it, but here are two very large plate men—and the plates of the country are produced, or probably 90 per cent are produced by eight companies in the United States—and as to two of them we took their May costs and found that their May costs on plates ranged from $37 to $49—my memory may not be strictly exact, but it is in that vicinity—and they stated to us that if they had to buy at the present contract rates their cost for plates would run up to $54 to $62. One of the large plate concerns advised that it had already contracted for pig iron at over $50 up to next June.

With reference to the railroad contracts, what you have said is very true, and it is particularly true of coal. I have heard from several large operators that they could make a profit, and a large profit on the price fixed for coal in the Illinois field, for instance, if they could cancel old contracts for a large part of that production with railroad companies, which are at prices at which there is scarcely any profit at all. The result is that the railroad companies are getting coal at very low prices and other consumers of coal are paying for it at high prices.

Senator KELLOGG. What I mean is the railroad company can not rely on handling; it is impossible for them to risk it; they will not buy their material, their coal, or anything, but generally have got to contract?

Commissioner DAVIES. Yes, sir.

Senator CUMMINS. To answer Mr. Davies, nearly all the low coal contracts expired on the 1st of April or the 1st of July of this present year, and the contracts that have been made since that time are not unreasonable at all?

Commissioner Davies. I think that is true.

The Chairman. Senator Pomerene, is there anything in this bill that pertains to public utilities that declares the use of iron and steel is a public need?

Senator Pomerene. No; it is based upon the war power entirely.

The Chairman. Is not this suggestion worthy of consideration? I amagine there is no question as to the power of the National Government to declare almost anything that is generally necessary to be of public use; it has done that with reference to railroads, telegraph lines, and telephone lines; the State government has done that with reference to water and gas companies and electric light companies. I do not know that the National Government has ever sought to regulate the use of water or electricity or the use of gas in interstate commerce, but I amagine there is no doubt about its right to do it. Now, then, why could we not declare that the use of ore and iron and steel was a public use and regulate it in interstate commerce?

Senator Cummins. Your statement of the law is not quite correct. As I understand it, the Supreme Court of the United States, in the case of Munn *v.* Illinois, declared that what is a public use is a judicial question, not a legislative one, and that is to be determined by the character of the property and the use to which it is put.

The Chairman. Giving great weight, though, to a legislative decree.

Senator Cummins. In the absence of the war power, which looms up before us, we do not know just where its body and soul may be—in the absence of the war power I do not think the legislature can make what the civilization of the time declares to be a private use a public use. The court has got to say whether that use is a public use.

The Chairman. But the legislative declaration would have great weight, and it seems to me that in the present condition of things there is no use in which the public are more greatly concerned than in the use of iron and steel. It seems to me that any argument that would apply to electricity or gas or water would apply to iron or steel, which enter as component parts into almost everything that we use.

Senator Kellogg. It applies to cotton, does it not; potatoes; it applies to anything and everything of use?

The Chairman. The legislative declaration that the use of this thing is so essential and necessary to the public, and the conditions are such as to require the control of that use. It seems to me there is hardly anything to which the doctrine can not be applied, if the public judgment has been expressed, through a legislative decree, that that particular thing is essential.

Mr. Fairchild. I have not read the Munn *v.* Illinois case in a good many years, but my recollection is that it applied in that case to wheat.

Senator Cummins. Public warehouses. In that particular case grain.

Senator Kellogg. An elevator used in the transportation of grain in interstate commerce.

Senator POMERENE. Here is the Munn case [reading]:

Where the owner of property devotes it to a use in which the public has an interest, in effect he grants to the public an interest in such use and must, to the extent of that interest, submit to be controlled by the public for the common good as long as he maintains its use. He withdraws his grant by discontinuing the use.

That is in the syllabus. If you apply that doctrine to your iron and steel you would not have any trouble, would you.

The CHAIRMAN. They might stop producing iron, but they would not do it. Just as a man could stop producing electricity, but he would not do it.

Senator CUMMINS. If you put it on that ground there is no business that does not become a public business.

The CHAIRMAN. The only test is the legislative declaration as to the necessity of this thing. The public impressment upon the thing itself of a public use by a legislative decree. I imagine that might be done in such a way as to come under judicial condemnation——

Senator CUMMINS. My point is it is altogether a judicial question, unless it is the war power.

The CHAIRMAN. Even apart from the legislative declaration I do not know how the court could declare in the present condition of society that the use of iron and steel was anything but a public use; was any less a public use than the use of electricity and gas.

Senator CUMMINS. I entirely agree with you about that.

Commissioner DAVIES. It may interest you, Senator, if you have not noted it, to know that the constitution of Oklahoma expressly provides that it shall be a legislative function for the legislature to decree when an article of commerce becomes impressed with public use and subject to regulation.

Senator CUMMINS. Of course, if the people themselves want to make it a legislative question they can, but I do not think any legislature can.

Commissioner DAVIES. Of course, then, if the legislature should decree and bring it up to the Supreme Court whether it was a public use——

Senator CUMMINS. Suppose we attempted to fix the price at which Woodward & Lothrop attempted to sell every article in their store?

The CHAIRMAN. In interstate commerce?

Senator CUMMINS. No; I mean as the controlling power of the District of Coliumbia; that no matter how emphatically you might decree that to be a public business, our declaration would not conclude the matter, nor would not have any weight in the matter.

The CHAIRMAN. You can reduce almost any contention to an absurdity.

Senator CUMMINS. I am not sure whether we have not come to the point where it will be held to be a public use.

Commissioner DAVIES. Probably the best informed man on Government service I know of, on steel, is Dr. Walker. He is here. He is our chief economist. I do not know whether he has anything to offer, but I am sure if he has it will be well worth your time.

The CHAIRMAN. Dr. Walker, have you any suggestions to make in addition to those already made?

Dr. WALKER. There was one point made by Senator Kellogg in regard to these bona fide contracts, which occurs to me at the moment.

Commissioner Davies spoke first of the wide disparity between a $25 price, assuming the Government fixed that price, and, say, the current market price; and Senator Kellogg, as I understood him, took the position that these current market prices were not the ones that would be enforced; that they do not apply to large tonnage; that the actual contracts were at considerably lower figures, say, $35 a ton.

Now, assuming the Government would fix the price at $25 even, those other $35 contracts would present a difference in cost of production between those that bought at the Government price and those that bought on the existing bona fide contracts, which would, in my judgment, upset any reasonable price-fixing scheme that the Government might decide on establishing for subsequent steel production, so that it is merely an argument that goes to the question of degree and does not affect the validity of the position taken by Mr. Davies, that these bona fide contracts, if allowed to continue, would completely upset a successful scheme of price regulation at any reasonable figure.

I think the figure he took—$25—was certainly a liberal figure to go on.

Senator Cummins. One of the thoughts in my mind, however, is this: How would the man who buys the pig iron at $35 a ton, or $40, whatever he may have agreed to pay, compete in his product with the man who gets it at $25?

Mr. Walker. That is my point. It would completely upset him; he could not compete with that $10 difference, let alone a $25 difference, and the Government regulating such product at respective levels that would naturally harmonize with a $25 figure.

The Chairman. Of course, if the Government had the power to decree this to be a public use, and the courts should sustain the exercise of that power, all contracts would be abrogated. I imagine that a water company is a purely private organization supplying its customers with water if it has not as yet been decreed to be a public use and subject to public regulation, but just as soon as that declaration is made and regulation is made, at that moment all contracts end and all have a right to resort to the public utility for the commodity upon equal terms. So my mind is directed to this as the possible solution of the whole question, whether we could not simplify it by confining the regulation purely to iron ore, pig iron, and steel billets or steel plates, upon the assumption that the basic price of these things being fixed, and being reasonably fixed, that all the products in which they enter will be sold at a reasonable price?

Dr. Walker. May I make a comment on that at this point?

The Chairman. Yes.

Dr. Walker. In the present state of the steel market, as a matter of practical study, I should not anticipate that would be the consequence. We find it illustrated in the steel market at the present time. The prices of ore are comparatively high—higher than ever before. The prices of coke are very high—unheard-of prices. They have produced a high cost of pig iron; but, even taking those prices of ore and coke, translating them into the cost of pig iron, as it is done for those who have to purchase it, and getting a very high pig-iron cost on that account, we do not find the price of pig iron corresponds even to that high cost, which is away above this high cost of pig iron.

In other words the same factor that has made the coke price out of all proportion to the cost of coke makes the pig-iron price high out of all proportion to the cost of pig iron, made even by the people who are paying the highest prices for raw material. And so in successive stages we find with certain costs of steel, that the price of shapes is one thing and the price of plates very different, although normally the cost of shapes and plates is approximately the same, and normally their prices have been about the same. if fact, one familiar with the past prices of the articles knows that ordinarily they were quoted at the same level, especially if there was any general agreement about what the prices ought to be among the producers.

Now, take the price of shapes to-day. I do not remember the exact figures, but it is about one-half the price of plates. Why? Not on account of different conditoins in cost of crude steel, but on account of different demand conditions for these different articles. The same thing that has put the price of pig iron away above the cost of even high-cost pig iron has put the price of plates away above even the high cost of plates and much higher than the price of shapes, which normally, and even under present conditions, has for the same mill, the same cost approximately as plates. So you can not rely on fixing a basic price to get an even proportionally reasonable price of successive products, and the illustration of plates and shapes is one of the very best illustrations you could pick out. And taking them as typical is a mistake; plate prices are away out of proportion to any products of a similar degree of manufacture.

The CHAIRMAN. Now, Doctor, if you should determine to fasten upon this business the character of a public use, a public utility, how far do you think we would have to go in fixing the prices of these various successive products in order to insure justice, both to the Government and to the public?

Dr. WALKER. Well, I take it that this proposition of price regulation, which was injected into coal and coke for example, and is now contemplated with respect to iron and steel products, may well apply to various other branches of industry, equally well, though perhaps scarcely to the same degree, except as to coal and coke, as to iron and steel.

As I understand the bill, the language is sufficiently general, as Mr. Fairchild has pointed out, to leave no precise limits. I presume that those who drafted the bill had in mind iron and steel products as generally understoood in the trade: those, also, as Mr. Fairchild has pointed out, include in practice certain products not wholly iron and steel, like galvanized wares and tinplate wares. Now, how much beyond that it goes in contemplation of the drafters of the bill I do not know. In contemplation of law, I think it goes on indefinitely.

The CHAIRMAN. In order to meet the present emergency, it would be necessary to fix the price of galvanized iron, for instance, or tinplate?

Dr. WALKER. I should think the tin plate very probably. We have not made any special inquiry into that. We have not paid so much attention to the more finished articles as we have to the heavier end, as they call it; but I should anticipate it would be desirable for

tin plate, and how much or how far beyond that we should go into the manufactures of iron and steel that are not ordinarily produced at the plants which make steel, or at rolling-mill plants, which form the steel into its ordinary commercial shapes, I do not know; that requires knowledge of a good many branches of the industry I have not studied to the same degree that I have steel and iron.

The CHAIRMAN. The United States Steel Corporation, does that incorporate in its production galvanized iron?

Dr. WALKER. Oh, yes.

The CHAIRMAN. And tin plate?

Dr. WALKER. Galvanized sheets and tin plates are typical products of the iron and steel industry, as it is understood in the trade and as reported by the iron and steel industry.

The CHAIRMAN. What do you regard as the important ones of the successive productions—first is the iron ore or certain pig iron?

Dr. WALKER. The coke also, but that is covered by the other bill.

The CHAIRMAN. First, the iron; second, the pig iron; third, billets?

Dr. WALKER. No, sir; I would put all semifinished steel, which includes blooms, slabs, and billets.

The CHAIRMAN. What does that include?

Dr. WALKER. Blooms, slabs, billets, and sheet bars.

The CHAIRMAN. Then where do the plates come in?

Dr. WALKER. Plates are rolled from slabs ordinarily, and rails and shapes are rolled——

The CHAIRMAN. You would, then, put plates, rails, and shapes; what else?

Dr. WALKER. Well, merchant bar, and skelp for rolling tubes.

The CHAIRMAN. What is skelp?

Dr. WALKER. Large flats something like sheet bars that are made for rolling tubes.

The CHAIRMAN. Any others?

Dr. WALKER. Well, tubes.

The CHAIRMAN. With respect to this emergency——

Dr. WALKER. I would certainly make it cover the iron and steel trade, as it is commonly classified.

The CHAIRMAN. And that would include how many products? Would it include more than 10?

Dr. WALKER. More than 20, I suppose.

The CHAIRMAN. But not any in excess of 20?

Dr. WALKER. All these products have numerous subdivisions—for example, tubes. There are rolled tubes and drawn tubes.

The CHAIRMAN. But the tubes are made of steel entirely, are they not?

Dr. WALKER. Well, they are made of steel and also of refined iron.

Commissioner DAVIES. In that connection it may be interesting to know, Senator, that they had established the prices of coke, iron, and iron and steel products in England by a list of prices which was projected in 1916, and of that list I have a copy here; it takes five typewritten pages and has 20 items, perhaps, to each page, so that in order to bring the relief which the legislation anticipated in England it was necessary for them to fix the prices on the coke, iron, and

steel industry of at least 100 products, and I think that that is illuminating as affecting this situation and your question.

The CHAIRMAN. Do you know whether that was successful there?

Commissioner DAVIES. I understood that it was successful to a degree, but that it has required a very large administrative force, and I was told the other day by some one connected with the British Embassy that they have extended their control down to the refined products to a very remarkable degree, so that even it extends to door locks, and they control that by license, and they control the industry very closely.

Senator POMERENE. My information is also they have increased by this administration the output of the iron and steel mills.

Commissioner DAVIES. I think there is no doubt of that.

Senator POMERENE. I saw an article on that some time ago.

The CHAIRMAN. Will you insert this statement in the record?

Commissioner DAVIES. I will be very glad to do so.

Senator POMERENE. Let me ask you, in connection with that, Was there authority conferred on some administrative board to fix these prices by Parliament?

Commissioner DAVIES. I think the defense of the realm act was sufficiently broad, and I think it was the board of trade, but I am not absolutely sure. I can give you that information.

Senator POMERENE. If you have got that act of Parliament and those special provisions relating to this subject of price fixing, I should like to have that incorporated in the record.

Commissioner DAVIES. I would be very glad to get it.

The CHAIRMAN. I will state in this connection that a very thorough compilation of all the laws of the beligerent countries, affecting these questions of war administration generally was compiled by a competent man in New Hampshire: I can not recall his name; aided by Profg. Locke, formerly of the Williams and Mary College, I think, and Senator Hollis asked to have it printed, but he has not as yet been able to secure the authority to print it. It would be somewhat costly; it would cost $4,000 or $5,000.

Senator CUMMINS. Yes; and it is very important, too.

The CHAIRMAN. I wonder that it has not been done.

Senator CUMMINS. But the trouble is, it is a volume of about 1,000 pages.

Senator POMERENE. I want to ask the Federal Trade Commission and their aides here to take up that question of contracts and give us your suggestions as to the method by which you would treat them, and let us have the benefit of your thought.

Commissioner DAVIES. The method by which we would treat them?

Senator POMERENE. Yes; how should this bill be amended in that respect, so as to take care of all outstanding contracts?

Commissioner DAVIES. We would be very glad to do so, Senator.

Mr. Chairman, in connection with the filing of this British list, may we have the privilege of submitting for your file, and as exhibits as a part of this record, such tables of costs as may be helpful to you, in our judgment, and submit them within the course of 24 hours?

The CHAIRMAN. Certainly.

Senator POMERENE. Let me suggest—I thought you had a book here containing the results of the investigation by the board of corpora-

tions of the cost of iron and steel in its various stages, etc., all itemized. I think it would be well to have all of those tables incorporated in this record. There are probably 25 or 30 pages of it.

Senator CUMMINS. There is a series of tables some one showed me this afternoon that was most valuable. I do not know that we can print them all, but they are very valuable.

The CHAIRMAN. If you will furnish them, we can print them. I will say that I will have inserted in the record some correspondence I have upon this subject; I will furnish it to the reporter. I will also state that letters were sent to the Lackawanna Steel Co., the Pittsburgh Steel Co., the Bethlehem Steel Co., the United States Steel Corporation, to C. M. Schwab, chairman of the board of the Bethlehem Steel Corporation, and to E. H. Gary, president of the Steel Corporation, informing them that the hearing on the Pomerene bill would commence to-day at 10 o'clock and inviting them to be present. This communication was sent September 18.

Commissioner DAVIES. At any time we are at your command, either any of the commission or any of our experts.

(The documents and tables referred to in Commissioner Davies's statements are here printed in full, as follows:)

MAXIMUM PRICES IN ENGLAND.

Maximum prices for metallurgical coke.	Per ton net f. o. t. makers' ovens. £	s.	d.
Durham and Northumberland—blast-furnace coke	1	8	0
Durham and Northumberland—foundry coke	1	10	6
Lancashire—blast-furnace coke	1	5	8
South Wales and Monmouthshire—blast-furnace coke	1	10	0
South Wales and Monmouthshire—foundry coke	2	3	0
South Yorkshire—blast-furnace coke	1	5	8
Staffordshire and Midland Counties—blast-furnace coke	1	5	8
West Yorkshire—blast-furnace coke	1	5	8

Maximum prices for pig iron.	Per ton net f. o. t. makers' works. £	s.	d.
Hematite pig iron:			
East coast—			
Mixed, Nos. 1, 2, and 3	6	2	6
Special quality, containing under .04 of phophorus and sulphur	6	7	6
Special quality, containing under .03 of phosphorus and sulphur	6	15	6
Special quality, containing under .02 of phosphorus and sulphur	7	0	0
Scottish—			
Mixed, Nos. 1, 2, and 3	6	2	6
Special quality, containing under .03 of phosphorus and sulphur	7	10	0
Welsh—			
Mixed, Nos. 1, 2, and 3	6	2	6
Special quality, containing under .03 of phosphorus and sulphur	6	15	6
Special quality, containing under .02 of phosphorus and sulphur	7	0	0
West coast—			
Mixed, Nos. 1, 2, and 3	6	7	6
Special quality, containing under .03 of phosphorus and sulphur	6	15	6
Special quality, containing under .02 of phosphorus and sulphur	7	0	0
Cleveland pig iron:			
No. 1	4	11	6
Other grades	4	7	6
Derbyshire, Leicestershire, and Nottinghamshire pig iron:			
No. 4 forge	4	10	0
No. 3 foundry	4	12	6
No. 2 foundry	4	14	6
No. 1 foundry	4	16	6
Basic	4	17	6
Lincolnshire pig iron: Basic or foundry	4	12	6
Northamptonshire pig iron:			
No. 4 forge	4	7	6
No. 4 foundry	4	9	0
No. 3 foundry	4	10	0
No. 2 foundry	4	12	0
No. 1 foundry	4	14	0
Basic	4	17	6

	Per ton net f. o. t. makers' ovens. £	s.	d.
North Staffordshire pig iron:			
No. 4 forge	4	15	0
Foundry Nos	4	17	6
Basic	4	17	6
South Staffordshire, Shropshire, and Worcestershire pig iron:			
"Part mine" forge	4	15	0
"Part mine" foundry	4	17	6
Common Staffordshire	4	10	0
"All mine" forge	5	15	0
"All mine" foundry	6	0	0
"Warm air" forge	7	5	0
"Warm air" foundry	7	15	0
Special quality Lord Dudley's cylinder	8	7	6
Cold blast iron	9	2	6
Scottish foundry and forge pig iron:			
Nos. 3, 4, and lower grades of Monkland, Dalmellington, Englinton, and Govan	5	14	0
Nos. 3, 4, and lower grades of all other brands	5	15	6
No. 1 quality (Scottish) to be 5s. per ton above these prices.			

Maximum basis prices for steel.[a]

	Per ton net f. o. t. makers' works. £	s.	d.
Steel ship bridge and tank plates, subject to list of extras "A" dated Jan. 11, 1916	11	10	0
Steel ship bridge and tank thin plates:			
Under ¼ inch thick (except 0.24 inch (9.7 pounds Admiralty, for which see List "A") down to and including 3/16 inch thick (including 7½ pounds Admiralty)	14	10	0
Under 3/16 inch thick (and under 7½ pounds Admiralty) down to and including ⅛ inch thick (and 5 pounds)	16	0	0
Under ⅛ inch thick down to and including 3/32 inch thick	17	0	0
Under 3/32 inch thick down to and including 1/16 inch thick	17	10	0
Boiler-quality basis £1 per ton over the above.			
Subject to list of extras "B," dated Jan. 11, 1916.			
Steel S. M. boiler plates: Subject to list of extras "C," dated Jan. 11, 1916	12	10	0
Steel angles and bulb angles:			
Angles 7 to 11 united inches (including 6 inches by 6 inches) ⅜ inch thick and up			
Bulb angles 9 to 12 united inches (including 9 by 3½ inches) ⅜ inch thick and up	11	2	6
Subject to list of extras "D," dated Jan. 11, 1916, which covers steel angles, bulbs, zeds, channels, tee bulbs, tees, and flats.			

	Angles. £	s.	d.	Tees. £	s.	d.
Small steel angles, tees, and flats:						
Under 6 inches down to and including 4 united inches	14	0	0	15	0	0
Under 4 inches down to and including 3 united inches	14	10	0	15	10	0
Under 3 united inches to and including 2 united inches	15	0	0	16	0	0
Flats 5 inches and under down to and including 1¼ inches				15	10	0
Subject to list of extras "E" dated Jan. 11, 1916.						
Steel rounds, squares, and hexagons:						
Bars, 3 inches to 5½ inches without tests				12	10	0
Bars, 3 inches to 5½ inches with tests				13	0	0
Subject to list of extras "F" dated Jan. 11, 1916.[b]						

[a] Additional classes of steel. See Notice, Jan. 1, 1917, of modification of general permit, p. 553.
[b] List of extras "F." From this list Nos. 6 and 13 are to be omitted. See Notice, Jan. 1, 1917, p. 553.

	Per ton net f. o. t. makers' ovens. £	s.	d.
Small steel rounds, squares, and hexagons:			
Rounds and squares under 3 inches down to and including $\frac{3}{4}$ inch without tests	15	0	0
Rounds and squares under 3 inches down to and including $\frac{3}{4}$ inch with tests	15	10	0
Hexagons under 3 inches to $\frac{3}{4}$ inch across flats, £1 per ton over the above.			
Subject to list of extras "G" dated Jan. 11, 1916.			
Steel joists, subject to list of extras marked "H" dated Jan. 11, 1916	11	2	6
Rails, 60 pounds per yard and over	10	17	6
Rails, 50 pounds per yard and over, but under 60 pounds per yard	11	0	0
New slightly defective rails, 5 s. per ton less than these prices.			
Sheet and tinplate bars	10	7	6
Blooms and billets for rerolling (ordinary quality)	10	7	6
Blooms and billets for rerolling (special quality)	11	0	0

	Per ton net f. o. t. at point of purchase. £	s.	d.
Relayable rails, 50 pounds per yard and over[c]	10	0	0

The above prices for steel are subject to extras not exceeding those contained in the list published by the ministry of munitions on the 1st day of November, 1916, entitled "List of authorized extras, chargeable on steel material," which includes lists A, B, C, D, E, F, G, H, above referred to,[d] copies of which can be had on application to the Director of Steel Production, Ministry of Munitions of War, Whitehall Place, London, S. W. 1.

Steel scrap sold without guaranteed analysis.[e]

	Per ton delivered buyers' works. £	s.
Heavy steel melting scrap	5	10
Special handy heavy steel melting scrap suitable for crucible use	5	15
Steel turnings and borings	2	15
Special short extra heavy steel turnings	3	15

Maximum basis prices for bar iron.

	Per ton net f. o. t. makers' works. £	s.
Standard quality, ordinary sizes and merchants' lengths	13	15

	Per ton less $2\frac{1}{2}$ per cent f. o. t. makers' works. £	s.
Marked bars	15	10

Subject to extras for special sizes and qualities not exceeding those contained in the list published by the ministry of munitions on the 1st day of November, 1916, entitled "List of authorized extras chargeable on bar iron."

To the above-mentioned prices for steel and bar iron a sum not exceeding $2\frac{1}{2}$ per cent on such prices may be added in the case of sales by persons other than the makers.

Stockholders of steel and bar iron are permitted to sell from their stock at the prices above mentioned plus a maximum addition of £3 per ton to cover carriage and other charges, including loading outward from their stores.

This £3 per ton will include the merchant's commissions of $2\frac{1}{2}$ per cent and is not in addition thereto.

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[c] Relayable rails. See footnote (a) to p. 551 relating to maximum prices for second-hand rails.

[d] List of extras: The Notice of the Minister of Munitions, dated Jan. 1, 1917, printed at p. 553, directs that extras Nos. 6 and 13 shall be omitted from list F. Further lists of extras J, K, and L, were issued Jan. 1, 1917.

[e] Steel scrap: For maximum prices for steel scrap if sold ithout guaranteed analysis, see notice of Jan. 1. 1917, of addition to general permit (p. 552), and if with such guaranteed analysis further notice of same date (p. 533) of modification of general permit.

Stockholders are permitted to resell finished steel rolled by manufacturers from steel purchased by them at prices not exceeding the actual purchase price to the stockholders plus the above-mentioned £3 per ton, provided that they keep stock ledgers showing all purchases and sales of such material, so that the prices of such purchases and sales can at any time be verified by the

CONNELLSVILLE COKE PRICES FOR 16 YEARS.

We present below tables showing monthly prices of prompt shipment Connellsville furnace and foundry coke for 16 years, 1901 to 1916, inclusive, averaged from weekly quotations in the Iron Age:

Average prices of prompt Connellsville furnace coke, per net ton at oven.

	1901	1902	1903	1904	1905	1906	1907	1908
January	$1.75	$2.90	$5.00	$1.60	$2.46	$2.625	$3.53	$1.92
February	1.75	2.50	5.00	1.525	2.56	2.14	3.50	1.86
March	1.90	2.875	5.00	1.65	2.43	2.24	3.02	1.725
April	2.00	2.50	4.20	1.60	2.075	2.45	2.725	1.57
May	2.00	2.50	3.50	1.50	1.875	2.46	2.16	1.50
June	1.875	2.69	3.00	1.45	1.82	2.325	1.89	1.55
July	1.75	3.00	2.50	1.45	1.81	2.51	2.40	1.575
August	1.75	3.875	2.25	1.45	1.80	2.76	2.62	1.50
September	1.75	5.00	2.20	1.45	2.10	2.85	2.825	1.50
October	1.77	8.00	1.90	1.475	2.61	2.84	2.85	1.53
November	1.95	6.00	1.75	2.04	2.95	3.13	2.41	1.725
December	2.14	6.00	1.625	2.125	2.79	3.525	2.06	1.82

	1909	1910	1911	1912	1913	1914	1915	1916
January	$1.59	$2.55	$1.40	$1.82	$3.88	$1.85	$1.50	$2.94
February	1.59	2.125	1.45	1.78	2.52	1.85	1.50	3.38
March	1.60	2.00	1.55	2.125	2.40	1.90	1.50	3.47
April	1.60	1.775	1.59	2.39	2.15	1.86	1.50	2.41
May	1.575	1.66	1.50	2.28	2.13	1.77	1.50	2.30
June	1.525	1.65	1.42	2.02	2.11	1.75	1.56	2.49
July	1.58	1.59	1.44	2.21	2.45	1.75	1.64	2.75
August	1.66	1.57	1.46	2.21	2.50	1.70	1.50	2.80
September	2.39	1.60	1.50	2.375	2.29	1.65	....	2.94
October	2.76	1.59	1.50	3.41	2.08	1.60	2.03	4.88
November	2.74	1.50	1.52	3.94	1.82	1.52	2.28	6.90
December	2.67	1.44	1.60	4.00	1.75	1.50	2.64	8.38

Average price of prompt Connellsville foundry coke, per net ton at oven.

	1901	1902	1903	1904	1905	1906	1907	1908
January	$2.25	$3.17	$6.50	$2.18	$2.38	$3.42	$4.25	$2.45
February	2.31	3.50	6.50	2.10	2.68	2.65	4.00	2.39
March	2.50	3.50	6.50	2.25	2.75	2.78	3.65	2.25
April	2.50	3.125	5.50	2.15	2.70	2.95	3.31	2.22
May	2.50	3.15	4.50	2.00	2.55	2.81	3.00	2.03
June	2.375	2.875	3.50	1.90	2.40	2.65	3.00	2.00
July	2.25	3.20	3.25	1.80	2.35	2.79	3.00	2.00
August	2.25	4.25	3.00	1.75	2.25	3.00	3.08	1.92
September	2.25	6.00	2.875	1.85	2.50	3.19	3.20	1.90
October	2.25	9.00	2.875	2.00	3.00	3.31	3.25	2.10
November	2.31	7.00	2.50	2.25	3.50	4.00	2.75	2.20
December	2.39	7.00	2.25	2.35	3.50	4.125	2.50	2.25

	1909	1910	1911	1912	1913	1914	1915	1916
January	$2.00	$2.90	$1.90	$1.975	$4.40	$2.50	$2.00	$3.50
February	1.95	2.70	2.10	2.09	3.25	2.50	2.00	3.50
March	1.95	2.60	2.05	2.56	3.00	2.45	2.00	3.75
April	1.86	2.45	2.00	2.69	3.00	2.40	2.00	3.56
May	1.85	2.20	1.81	2.58	2.85	2.40	2.00	3.25
June	1.80	2.17	1.76	2.40	2.80	2.32	2.00	3.25
July	2.00	2.15	1.825	2.40	2.70	2.22	2.05	3.25
August	1.95	2.15	1.85	2.40	2.90	2.25	2.00	3.30
September	2.55	2.12	1.85	2.54	2.90	2.10	2.07	3.31
October	2.90	2.10	1.81	3.65	2.81	2.00	....	3.88
November	3.25	2.05	1.85	4.25	2.60	1.92	2.88	7.10
December	3.20	1.97	1.90	4.50	2.50	1.90	2.95	8.63

Attention should be called to the peculiar conditions prevailing in the coke market in the last half of 1902 and the first half of 1903. In all this period coke prices were seriously affected by the extraordinary demand for coke caused by the scarcity of anthracite coal, resulting from the great strike of anthracite-coal miners which began in the spring of 1902 and was not settled until late in that year. For several months blast furnaces and foundries were greatly hampered in their operations by inability to secure a regular supply of fuel. Prompt furnace and foundry coke at this time sold as high as $11 per ton at oven, and it is possible that even higher prices may have been realized. Blast furnaces were often banked for a week or two awaiting coke deliveries, and many foundries ran intermittently. Coke was imported to some extent for the use of blast furnaces and foundries located near the seaboard, and foundry coke was shipped all the way to Chicago from Colorado. The quotations which are above given for this period are therefore to be regarded as to some extent conjectural.

MALLEABLE BESSEMER PIG-IRON PRICES, CHICAGO.

The table below shows monthly prices of malleable Bessemer pig iron at Chicago from 1901 to 1916, inclusive, averaged from weekly quotations in the Iron Age, per ton of 2,240 pounds:

	1901	1902	1903	1904	1905	1906	1907	[1] 1908
January	$15.00	$17.20	$23.24	$14.50	$17.50	$19.37	$26.00	$18.60
February	14.87	17.75	23.00	14.50	17.50	19.19	26.00	18.25
March	15.75	18.50	22.87	14.00	17.50	19.00	26.25	17.50
April	16.50	19.50	21.82	14.00	17.50	18.77	26.50	17.50
May	15.45	21.80	20.77	14.00	17.37	18.35	26.60	17.56
June	16.25	22.00	19.50	13.85	16.65	18.00	26.25	17.37
July	16.25	22.75	18.66	13.75	16.37	18.37	25.62	17.50
August	16.30	23.00	17.59	13.75	16.50	18.95	24.80	17.50
September	16.00	24.00	16.94	13.50	16.56	20.12	24.40	17.26
October	15.75	23.90	16.25	13.75	17.37	21.32	22.40	17.00
November	15.81	23.87	15.00	15.87	19.00	24.16	20.25	17.00
December	17.00	24.00	14.50	16.50	19.50	26.00	18.75	17.00

	1909	1910	1911	1912	1913	1914	1915	1916
January	$17.09	$19.00	$15.50	$14.35	$17.90	$13.88	$13.00	$19.00
February	16.75	19.00	15.50	14.14	17.31	13.94	13.00	19.00
March	16.50	18.40	15.50	14.00	17.25	14.25	13.00	19.40
April	16.50	17.50	15.25	14.00	17.05	14.25	13.00	19.50
May	16.66	17.06	15.00	14.40	16.00	14.06	13.00	19.50
June	16.50	16.75	15.00	14.50	15.62	13.88	13.00	19.50
July	16.90	16.56	15.00	14.50	14.65	14.00	13.00	19.50
August	17.12	16.50	14.80	15.10	15.00	14.00	13.44	19.00
September	18.50	16.40	14.50	16.25	15.00	13.25	14.30	19.00
October	18.50	16.06	14.50	17.10	15.20	13.00	15.25	19.88
November	19.00	16.00	14.35	17.87	14.87	12.88	17.13	25.80
December	19.00	16.00	14.35	18.00	14.63	12.90	18.20	29.50

[1] From this time on the prices are given as at furnace near Chicago, and 35 to 50 cents per ton should be added to get the price delivered to Chicago foundries.

MAHONING AND SHENANGO FOUNDRY IRON PRICES.

In the following table are presented the monthly average prices of No. 2 foundry pig iron at Valley furnace, namely, at furnaces in the Mahoning Valley, Ohio, and the Shenango Valley, Pa., from 1901 to 1916, inclusive, averaged from weekly quotations in The Iron Age:

	1901	1902	1903	1904	1905	1906	1907	1908
January	$13.20	$15.60	$22.30	$13.00	$16.12	$17.31	$24.60	$16.80
February	13.16	16.20	21.95	12.47	16.00	17.25	24.12	16.00
March	13.97	17.76	22.00	12.91	16.00	17.12	24.00	15.56
April	14.10	19.30	20.99	13.01	16.00	16.50	24.00	15.15
May	14.10	19.92	20.32	12.47	15.55	16.30	25.00	14.87
June	13.66	20.60	19.37	11.96	14.81	16.19	25.12	15.00
July	13.20	21.10	18.02	11.67	14.25	16.44	22.80	14.80
August	12.97	22.35	16.34	11.87	14.15	17.71	22.50	14.50
September	13.10	22.30	14.98	11.71	14.56	19.56	20.87	14.47
October	13.60	22.17	14.09	12.50	15.50	21.35	19.80	14.36
November	14.41	23.25	13.32	14.60	16.83	23.87	19.00	15.25
December	15.20	21.25	13.22	16.19	17.35	24.00	17.37	15.50

	1909	1910	1911	1912	1913	1914	1915	1916
January	$15.44	$17.00	$13.75	$13.00	$17.50	$12.85	$13.00	$18.50
February	15.06	16.69	13.75	13.00	17.00	13.19	13.00	18.31
March	14.50	16.10	13.75	13.12	16.69	13.25	13.00	18.50
April	14.00	15.62	13.75	13.25	15.55	13.25	12.75	18.50
May	14.19	15.31	13.75	13.25	14.62	13.00	12.94	18.20
June	14.90	14.75	13.56	13.25	14.06	13.00	12.69	18.13
July	15.19	14.31	13.50	13.37	13.87	13.00	12.70	18.25
August	15.31	14.15	13.50	13.69	14.00	13.00	13.62	18.25
September	15.75	13.75	13.44	14.44	14.00	13.00	14.72	18.39
October	17.12	13.94	13.37	16.10	13.84	12.90	14.87	20.00
November	17.25	13.90	13.20	16.94	13.50	12.75	15.50	25.00
December	17.00	13.75	13.00	17.25	13.50	12.75	18.30	30.75

Iron and Steel Prices for 19 Years.

MONTHLY AVERAGES COMPUTED FROM THE WEEKLY MARKET QUOTATIONS OF "THE IRON AGE" IN THE PERIOD 1898–1916 (WITH SUPPLEMENT).

Accompanying this issue of The Iron Age is our annual chart, in which lines are plotted to indicate the course of prices for pig iron, Bessemer steel billets, and some leading forms of finished iron and steel in the 19 years ended with 1916. The diagrams are based on monthly averages of prices quoted week by week in our market reports from the leading selling centers. The table below, which gives the monthly average prices on which the chart is based, includes also the average prices of No. 2 X foundry pig iron at Philadelphia, which have not been put in graphic form.

Bessemer pig iron at Pittsburgh, dollars per gross ton (2,240 pounds.)

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	9.87	10.87	24.99	13.15	16.70	22.15	13.91	16.85	18.35
February	10.05	11.60	24.80	14.43	16.93	21.45	13.66	16.41	18.35
March	10.39	14.59	24.72	16.31	17.37	21.85	14.25	16.35	18.28
April	10.41	15.03	24.70	16.75	18.75	21.28	14.18	16.35	18.19
May	10.30	16.20	21.00	16.30	20.75	20.01	13.60	16.16	18.10
June	10.34	18.51	19.72	16.00	21.56	19.72	12.81	16.65	18.23
July	10.25	20.65	16.75	16.00	21.60	18.89	12.40	14.85	18.41
August	10.35	21.75	15.60	15.75	21.62	18.35	12.81	15.20	19.00
September	10.78	23.43	13.87	15.75	21.75	17.22	12.63	15.91	19.54
October	10.36	24.18	13.06	15.89	21.75	16.05	13.10	16.54	20.35
November	10.15	24.78	13.43	16.00	21.68	15.18	14.85	17.85	22.85
December	10.58	24.90	13.43	16.31	21.75	14.40	16.65	18.35	23.75

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	23.15	19.00	17.34	19.90	15.90	15.05	18.15	14.96	14.59	21.58
February	22.85	17.90	16.78	19.34	15.90	14.90	18.15	15.09	14.55	21.51
March	22.85	17.86	16.25	18.60	15.90	15.09	18.15	15.09	14.55	21.75
April	23.35	17.49	15.78	18.27	15.90	15.15	17.90	14.90	14.55	21.95
May	24.01	16.93	15.84	17.52	15.90	15.13	17.70	14.90	14.59	21.95
June	24.27	16.90	16.05	16.60	15.90	15.15	17.14	14.90	14.70	21.95
July	23.55	16.83	16.46	16.40	15.90	15.20	16.70	14.90	14.95	21.95
August	22.90	16.23	17.03	16.09	15.90	15.46	16.52	14.90	15.95	21.95
September	22.90	15.90	18.05	15.90	15.90	16.15	16.65	14.90	16.85	22.26
October	22.00	15.71	19.53	15.90	15.44	17.80	16.60	14.84	16.95	24.08
November	20.65	16.59	19.90	15.82	15.00	18.02	16.02	14.59	17.51	30.15
December	19.34	17.40	19.90	15.90	15.03	18.15	15.77	14.70	19.65	35.58

Bessemer pig iron at Pittsburgh, dollars per gross ton (2,240 pounds)—Contd.

BESSEMER STEEL BILLETS AT PITTSBURGH, DOLLARS PER GROSS TON. (HIGH $58; PRESENT $52.)

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	14.93	16.62	34.50	19.75	27.50	29.60	23.00	22.75	26.25
February	15.06	18.00	34.87	20.31	29.37	29.87	23.00	23.50	26.50
March	15.25	24.30	33.00	22.88	31.26	30.62	23.00	24.00	26.70
April	15.06	25.37	32.00	24.00	31.50	30.25	23.00	24.00	27.00
May	14.85	26.75	28.90	24.00	32.20	30.37	23.00	23.50	26.40
June	14.65	30.10	27.25	24.38	32.37	28.87	23.00	22.00	26.63
July	14.50	33.12	21.00	24.00	31.75	27.60	23.00	22.00	27.25
August	15.85	35.40	18.20	24.20	31.06	27.00	23.00	24.00	27.80
September	16.00	38.87	16.93	24.88	29.50	27.00	20.00	25.00	28.00
October	15.56	38.75	16.50	26.70	29.70	27.00	19.50	25.62	28.00
November	15.06	36.50	18.95	27.00	28.50	24.00	20.25	26.00	28.88
December	15.80	33.75	19.75	27.50	29.12	23.00	21.20	26.00	29.50

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	29.40	28.00	25.00	27.50	23.00	20.00	28.30	20.13	19.25	32.00
February	29.50	28.00	25.00	27.50	23.00	20.00	28.50	21.00	19.50	33.50
March	29.00	28.00	23.00	27.50	23.00	19.75	28.50	21.00	19.70	42.40
April	30.12	28.00	23.00	26.75	23.00	20.00	28.50	20.80	20.00	45.00
May	30.30	28.00	23.00	26.12	22.60	20.80	27.37	20.00	20.00	45.00
June	29.62	25.75	23.00	25.30	21.00	20.87	26.50	19.50	20.50	43.50
July	30.00	25.00	23.50	25.00	21.00	21.50	26.60	19.00	21.38	41.00
August	29.25	25.00	24.13	24.62	21.00	22.12	26.00	20.25	23.13	44.20
September	29.37	25.00	25.00	24.40	20.75	23.62	24.87	21.00	24.10	45.00
October	28.20	25.00	26.25	23.75	20.00	26.00	23.30	20.00	24.63	46.25
November	28.00	25.00	27.13	23.30	19.50	27.00	21.00	19.25	26.50	52.00
December	28.00	25.00	27.50	23.00	19.25	27.00	20.00	19.00	30.60	57.50

BASIC PIG IRON, F. O. B. MAHONING OR SHENANGO VALLEY FURNACE, DOLLARS PER GROSS TON. (HIGH $—; PRESENT $—.)

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	....	....	....	....	....	....	....	15.46	17.06
February	....	....	....	....	....	....	....	15.25	16.82
March	....	....	....	....	....	....	....	15.55	16.85
April	....	....	....	....	....	....	....	15.06	16.88
May	....	....	....	....	....	....	....	15.06	17.00
June	....	....	....	....	....	....	11.76	14.60	16.94
July	....	....	....	....	....	....	11.20	14.00	17.12
August	....	....	....	....	....	....	11.69	14.32	17.70
September	....	....	....	....	....	....	11.60	14.86	18.44
October	....	....	....	....	....	....	12.19	15.25	19.55
November	....	....	....	....	....	....	14.00	16.87	21.37
December	....	....	....	....	....	....	15.70	16.75	21.50

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	21.90	16.90	15.50	16.87	13.25	12.35	16.41	12.50	12.50	17.81
February	22.00	15.97	15.12	16.31	13.65	12.25	16.30	13.19	12.50	17.69
March	21.50	15.62	14.94	16.00	13.75	12.81	16.11	13.00	12.50	18.20
April	21.50	15.25	14.25	15.94	13.75	13.00	15.87	13.00	12.50	18.13
May	22.90	14.91	14.12	15.19	13.32	13.00	15.15	13.00	12.50	18.00
June	22.40	15.25	14.62	14.70	13.05	13.12	14.50	13.00	12.50	18.00
July	21.75	14.51	15.05	14.50	13.12	13.40	14.37	13.00	12.74	18.00
August	21.25	14.69	15.25	14.12	13.00	13.94	14.06	13.00	14.06	18.00
September	20.06	14.43	15.90	13.70	12.80	14.37	14.00	13.00	14.75	18.31
October	19.50	14.04	16.94	13.15	12.52	15.98	13.90	12.81	15.00	19.88
November	18.12	14.72	17.26	13.25	12.42	16.37	13.09	12.48	15.75	25.10
December	17.50	15.60	17.05	13.40	12.25	16.50	12.71	12.50	17.50	30.00

Bessemer pig iron at Pittsburgh, dollars per gross ton (2,240 pounds)—Contd.

SOUTHERN NO. 2 FOUNDRY PIG IRON AT CINCINNATI, DOLLARS PER GROSS TON.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	9.50	10.31	20.69	13.45	14.55	21.65	12.37	16.25	16.75
February	9.25	11.69	20.50	13.12	14.75	21.50	12.12	16.25	16.75
March	9.25	13.75	20.30	14.00	14.75	21.37	12.10	16.25	16.65
April	9.25	14.50	20.19	14.50	16.87	20.15	12.50	16.25	16.63
May	9.37	14.56	19.75	13.85	18.35	18.87	12.25	15.81	16.75
June	9.30	16.00	18.75	13.37	20.19	17.75	11.80	14.65	16.44
July	9.25	17.56	16.81	13.00	20.75	16.15	11.81	13.94	16.06
August	9.37	18.35	14.25	13.00	23.06	15.19	12.00	14.40	17.30
September	9.55	19.94	13.62	13.06	25.00	14.75	12.00	14.37	18.69
October	9.75	20.75	12.87	13.75	25.65	13.50	12.81	15.31	20.00
November	9.75	20.75	12.95	14.00	23.62	12.00	15.19	16.60	23.38
December	9.90	20.75	13.75	14.25	22.44	12.05	15.85	16.75	25.00

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	26.00	16.15	16.25	17.25	14.25	13.25	16.95	13.88	12.40	17.90
February	26.00	15.75	16.13	17.06	14.25	13.31	16.69	13.81	12.40	17.90
March	26.00	15.50	15.05	16.30	14.25	13.50	16.31	14.00	12.27	17.90
April	25.06	15.20	14.25	15.37	14.25	13.75	15.65	13.75	12.34	17.90
May	24.25	14.75	14.50	15.00	13.95	14.15	14.94	13.75	12.40	17.90
June	24.10	15.25	14.70	14.85	13.44	14.25	14.06	13.63	12.50	17.34
July	23.85	15.00	15.75	14.75	13.25	14.70	13.75	13.30	12.71	16.90
August	23.00	15.25	16.38	14.31	13.45	15.06	14.06	13.25	13.71	16.70
September	21.50	15.65	17.35	14.25	13.31	15.87	14.25	13.25	14.15	17.28
October	20.95	15.75	17.88	14.25	13.25	16.80	14.35	12.90	14.78	18.03
November	19.50	16.00	17.75	14.25	13.20	17.25	13.87	12.90	16.15	22.40
December	17.00	16.25	17.45	14.25	13.19	17.25	13.95	12.50	17.10	25.90

LOCAL NO. 2 FOUNDRY PIG IRON AT CHICAGO (AT FURNACE), DOLLARS PER GROSS TON.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	11.35	11.47	23.85	15.10	16.25	23.45	14.47	17.85	19.60
February	11.28	12.47	23.85	14.60	16.85	23.35	13.91	17.85	19.41
March	11.10	14.95	23.85	15.60	18.51	23.22	14.05	17.80	19.35
April	11.26	15.47	23.72	15.85	18.97	22.87	14.35	17.60	19.10
May	11.35	15.72	22.65	15.85	20.85	20.72	13.85	17.60	18.90
June	11.35	17.95	20.72	15.35	21.85	19.85	13.70	17.00	18.54
July	11.35	19.22	18.60	15.35	21.00	18.25	13.60	16.47	18.60
August	11.35	20.65	16.25	15.35	22.10	17.22	13.60	16.60	19.45
September	11.35	22.22	15.35	15.35	23.35	16.41	13.85	16.60	20.16
October	11.35	23.35	14.85	15.10	23.35	15.70	14.10	17.66	21.48
November	11.35	23.45	14.85	15.23	23.35	15.10	15.98	19.15	24.70
December	11.35	23.85	15.10	15.85	23.35	14.81	16.95	19.60	25.85

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	25.85	18.45	17.35	19.00	15.50	14.00	17.90	13.75	13.00	18.50
February	25.85	18.16	16.75	19.00	15.50	14.00	17.31	14.00	13.00	18.50
March	26.10	17.85	16.50	18.30	15.50	14.00	17.25	14.25	12.95	18.70
April	26.35	17.73	16.50	17.50	15.00	14.00	17.00	14.25	13.00	19.00
May	26.85	17.63	16.50	17.06	15.00	14.50	16.00	14.06	13.00	19.00
June	26.60	17.73	16.50	16.75	15.00	14.50	15.62	13.69	13.00	19.06
July	25.55	17.55	17.00	16.56	14.87	14.70	14.70	13.75	13.00	19.00
August	24.85	17.35	17.13	16.50	14.50	15.37	15.00	13.69	13.44	18.40
September	24.10	17.05	18.70	16.40	14.50	16.00	15.00	13.25	13.90	18.13
October	22.45	16.85	19.00	16.06	14.46	17.00	15.00	12.94	14.63	19.63
November	20.66	17.10	19.00	16.00	14.09	17.75	14.87	12.56	17.13	25.80
December	18.80	17.35	19.00	16.00	14.00	18.00	14.60	13.00	18.10	29.50

Bessemer pig iron at Pittsburgh, dollars per gross ton (2,240 pounds)—Contd.

STANDARD BRANDS EASTERN PENNSYLVANIA NO. 2 X FOUNDRY PIG IRON AT PHILADELPHIA, DOLLARS PER GROSS TON.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	10.87	11.44	22.70	15.50	16.75	22.45	14.69	17.50	18.50
February	10.75	11.06	22.56	15.31	17.19	22.25	14.50	17.50	18.50
March	10.55	14.70	22.31	15.12	18.81	22.25	14.80	17.56	18.35
April	10.50	15.75	21.75	15.46	19.62	21.87	15.00	17.75	18.44
May	10.50	15.81	20.60	15.19	19.75	20.06	14.75	17.81	18.50
June	10.50	17.25	18.75	15.06	20.94	19.19	14.50	16.75	18.44
July	10.00	19.44	16.37	15.00	22.30	18.10	14.31	16.12	18.25
August	10.30	20.65	16.15	14.97	22.00	16.87	14.25	16.25	19.00
September	10.75	22.75	15.56	14.80	22.00	16.12	14.25	16.43	20.44
October	10.75	22.75	15.00	15.25	22.12	15.20	14.43	17.25	21.12
November	10.87	23.40	15.35	15.37	23.37	15.00	15.75	18.05	23.30
December	11.06	23.25	15.62	15.75	23.00	15.00	16.90	18.25	24.00

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	24.80	18.25	17.25	19.00	15.50	14.85	18.25	14.65	14.25	19.94
February	25.87	18.25	17.00	18.69	15.50	14.85	18.25	14.94	14.25	20.00
March	25.00	18.12	16.37	18.00	15.50	14.92	17.77	15.00	14.25	20.05
April	24.81	17.65	16.20	17.75	15.50	15.00	17.40	15.00	14.25	20.50
May	25.55	16.94	16.06	17.00	15.50	15.18	16.75	14.81	14.25	20.50
June	24.62	16.62	16.42	16.55	15.25	15.31	16.19	14.75	14.25	19.94
July	23.06	16.50	16.50	16.25	15.00	15.70	15.60	14.75	14.31	19.75
August	21.90	16.50	17.00	16.00	15.00	15.87	15.60	14.75	14.94	19.58
September	20.50	16.62	18.05	16.00	15.00	16.59	15.83	14.75	16.00	19.50
October	19.85	16.75	18.69	15.81	15.00	17.60	15.95	14.63	16.25	20.31
November	18.94	17.00	19.00	15.68	14.95	18.25	15.56	14.50	17.12	24.90
December	18.84	17.25	19.00	15.50	14.85	18.25	15.30	14.25	19.05	29.25

SOFT STEEL BARS AT PITTSBURGH, IN CENTS PER POUND.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	0.99	1.02	2.22	1.25	1.50	1.60	1.30	1.40	1.50
February	.95	1.12	2.21	1.30	1.51	1.60	1.30	1.40	1.50
March	.93	1.36	2.25	1.40	1.60	1.60	1.33	1.50	1.50
April	.95	1.56	2.10	1.47	1.60	1.60	1.35	1.50	1.50
May	.92	1.67	1.91	1.41	1.60	1.60	1.35	1.50	1.50
June	.90	1.98	1.52	1.40	1.60	1.60	1.35	1.46	1.50
July	.91	2.02	1.19	1.40	1.60	1.60	1.35	1.50	1.50
August	.94	2.14	1.05	1.44	1.60	1.60	1.35	1.50	1.50
September	1.02	2.40	1.12	1.50	1.60	1.60	1.31	1.50	1.50
October	.97	2.39	1.09	1.53	1.60	1.60	1.30	1.50	1.50
November	.94	2.24	1.18	1.50	1.60	1.37	1.31	1.50	1.54
December	.95	2.20	1.25	1.50	1.60	1.30	1.34	1.50	1.60

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	1.60	1.60	1.40	1.50	1.40	1.15	1.70	1.20	1.10	2.03
February	1.60	1.60	1.35	1.50	1.40	1.12	1.70	1.20	1.10	2.31
March	1.60	1.60	1.20	1.45	1.40	1.10	1.85	1.20	1.15	2.65
April	1.60	1.60	1.15	1.45	1.40	1.16	1.84	1.15	1.20	2.88
May	1.60	1.60	1.19	1.45	1.37	1.20	1.70	1.14	1.20	3.00
June	1.60	1.45	1.20	1.45	1.25	1.20	1.60	1.11	1.21	2.75
July	1.60	1.40	1.27	1.45	1.23	1.25	1.50	1.12	1.25	2.63
August	1.60	1.40	1.32	1.40	1.20	1.30	1.40	1.19	1.30	2.56
September	1.60	1.40	1.39	1.40	1.19	1.37	1.40	1.20	1.34	2.60
October	1.60	1.40	1.51	1.40	1.12	1.45	1.39	1.15	1.44	2.75
November	1.60	1.40	1.50	1.40	1.08	1.55	1.29	1.10	1.62	2.83
December	1.60	1.40	1.50	1.40	1.12	1.60	1.21	1.07	1.84	3.00

BILLET PRICES AT PITTSBURGH FOR 31 YEARS.

The table below gives the average monthly prices of 4 by 4 inch Bessemer steel billets at Pittsburgh from 1886 to 1916, inclusive. The prices are per gross ton and are averaged from weekly quotations in the Iron Age. Prior to 1886 steel billets were not a regular merchant commodity.

	1886	1887	1888	1889	1890	1891	1892
January	$33.00	$24.50	$29.38	$28.15	$36.65	$25.60	$25.00
February	33.13	35.44	29.38	27.81	35.25	26.00	24.36
March	33.00	36.00	29.13	27.25	31.88	26.25	23.00
April	32.00	34.75	28.63	27.00	28.38	25.35	22.81
May	30.50	32.38	28.35	26.90	27.55	25.50	22.41
June	30.75	31.40	28.06	26.75	30.25	25.25	22.97
July	30.33	31.50	28.00	27.13	30.70	25.50	23.50
August	30.00	32.50	28.40	28.20	30.38	25.31	23.81
September	30.50	31.80	29.00	29.50	30.13	25.00	23.65
October	31.63	31.63	29.25	33.70	28.70	24.90	23.53
November	32.00	31.00	29.00	34.00	27.39	24.16	24.94
December	32.90	29.00	28.44	35.60	26.25	24.20	22.40

	1893	1894	1895	1896	1897	1898	1899	1900
January	$21.56	$16.12	$14.90	$16.80	$15.42	$14.93	$16.62	$34.50
February	21.62	15.75	14.95	17.38	15.25	15.06	18.00	34.87
March	22.60	15.55	14.84	17.09	15.44	15.25	24.30	33.00
April	22.44	15.69	15.44	19.53	14.60	15.06	25.37	32.00
May	21.69	18.00	16.30	19.50	13.82	14.85	26.75	28.90
June	21.70	18.12	18.63	19.12	14.06	14.65	30.10	27.25
July	21.06	18.00	20.75	18.85	14.00	14.50	33.12	21.00
August	20.45	17.15	21.75	18.75	14.00	15.85	35.40	18.20
September	19.31	17.19	24.00	19.75	15.60	16.00	38.37	16.93
October	18.06	16.00	21.90	19.75	16.44	15.56	38.75	16.50
November	17.37	15.57	19.13	20.00	15.57	15.06	36.50	18.95
December	16.69	15.12	16.96	17.50	15.00	15.80	33.75	19.75

	1901	1902	1093	1904	1905	1906	1907	1908
January	$19.75	$27.50	$29.60	$23.00	$22.75	$26.25	$29.40	$28.00
February	20.31	29.37	29.87	23.00	23.50	26.50	29.50	28.00
March	22.88	31.25	30.62	23.00	24.00	26.70	29.00	28.00
April	24.00	31.50	30.25	23.00	24.00	27.00	30.12	28.00
May	24.00	32.20	30.37	23.00	23.50	26.40	30.30	28.00
June	24.38	32.37	28.87	23.00	22.00	26.63	29.62	25.75
July	24.00	31.75	27.60	23.00	22.00	27.25	30.00	25.00
August	24.20	31.06	27.00	23.00	24.00	27.80	29.25	25.00
September	24.88	29.50	27.00	20.00	25.00	28.00	29.37	25.00
October	26.70	29.70	27.00	19.50	25.62	28.00	28.20	25.00
November	27.00	28.50	24.00	20.25	26.00	28.88	28.00	25.00
December	27.50	29.12	23.00	21.20	26.00	29.50	28.00	25.00

	1909	1910	1911	1912	1913	1914	1915	1916
January	$25.00	$27.50	$23.00	$20.00	$28.30	$20.13	$19.25	$32.00
February	25.00	27.50	23.00	20.00	28.50	21.00	19.50	33.50
March	23.00	27.50	23.00	19.75	28.50	21.00	19.70	42.40
April	23.00	26.75	23.00	20.00	28.50	20.80	20.00	45.00
May	23.00	26.12	22.60	20.80	27.60	20.00	20.00	45.00
June	23.00	25.30	21.00	20.87	26.50	19.50	20.50	43.50
July	23.50	25.00	21.00	21.50	26.60	19.00	21.38	41.00
August	24.13	24.62	21.00	22.12	26.00	20.25	23.13	44.20
September	25.00	24.40	20.75	23.62	24.87	21.00	24.10	45.00
October	26.25	23.75	20.00	26.00	23.30	20.00	24.63	46.25
November	27.13	23.30	19.50	27.00	21.00	19.25	26.50	52.00
December	27.50	23.00	19.25	27.00	20.00	19.00	30.25	....

TANK PLATES AT PITTSBURGH, IN CENTS PER POUND.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	1.00	1.30	2.22	1.40	1.60	1.75	1.60	1.50	1.60
February	1.00	1.47	2.17	1.40	1.60	1.60	1.60	1.50	1.60
March	.97	1.75	2.03	1.47	1.60	1.60	1.60	1.60	1.60
April	1.02	2.05	1.87	1.57	1.60	1.60	1.60	1.60	1.60
May	1.10	2.12	1.69	1.60	1.60	1.60	1.60	1.60	1.60
June	1.10	2.32	1.39	1.60	1.69	1.60	1.60	1.60	1.60
July	1.09	2.45	1.16	1.60	1.75	1.60	1.60	1.60	1.60
August	1.12	2.55	1.09	1.60	1.75	1.60	1.60	1.60	1.60
September	1.15	2.85	1.11	1.60	1.75	1.60	1.44	1.60	1.60
October	1.12	2.79	1.07	1.60	1.84	1.60	1.40	1.60	1.60
November	1.11	2.52	1.31	1.60	1.82	1.60	1.40	1.60	1.62
December	1.16	2.30	1.39	1.60	1.82	1.60	1.45	1.60	1.70

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	1.70	1.70	1.60	1.55	1.40	1.15	1.75	1.20	1.10	2.25
February	1.70	1.70	1.52	1.55	1.40	1.11	1.71	1.20	1.10	2.56
March	1.70	1.70	1.30	1.55	1.40	1.12	1.70	1.18	1.10	3.10
April	1.70	1.70	1.27	1.55	1.40	1.21	1.68	1.15	1.15	3.56
May	1.70	1.70	1.29	1.51	1.39	1.25	1.60	1.12	1.15	3.75
June	1.70	1.62	1.25	1.48	1.35	1.25	1.45	1.10	1.16	3.63
July	1.70	1.60	1.33	1.41	1.35	1.30	1.45	1.10	1.22	3.44
August	1.70	1.60	1.40	1.40	1.34	1.35	1.44	1.18	1.26	3.70
September	1.70	1.60	1.46	1.40	1.29	1.47	1.40	1.20	1.34	4.00
October	1.70	1.60	1.50	1.40	1.17	1.53	1.36	1.14	1.44	4.00
November	1.70	1.60	1.54	1.40	1.13	1.59	1.26	1.08	1.65	4.15
December	1.70	1.60	1.55	1.40	1.15	1.60	1.20	1.05	2.04	4.25

BEAMS AT PITTSBURGH, IN CENTS PER POUND.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	1.15	1.30	2.25	1.50	1.60	1.80	1.60	1.50	1.70
February	1.15	1.30	2.25	1.50	1.60	1.60	1.60	1.50	1.70
March	1.15	1.40	2.25	1.52	1.70	1.60	1.60	1.60	1.70
April	1.15	1.50	2.25	1.60	1.70	1.60	1.60	1.60	1.70
May	1.15	1.50	2.25	1.60	1.60	1.60	1.60	1.60	1.70
June	1.15	1.70	2.07	1.60	1.60	1.60	1.60	1.60	1.70
July	1.15	1.94	1.90	1.60	1.84	1.60	1.60	1.60	1.70
August	1.21	2.05	1.74	1.60	2.00	1.60	1.60	1.63	1.70
September	1.20	2.25	1.50	1.60	2.00	1.60	1.44	1.70	1.70
October	1.20	2.25	1.50	1.60	2.07	1.60	1.40	1.70	1.70
November	1.20	2.25	1.50	1.60	2.05	1.60	1.40	1.70	1.70
December	1.20	2.25	1.50	1.60	2.00	1.60	1.44	1.70	1.70

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	1.70	1.70	1.60	1.55	1.40	1.15	1.75	1.20	1.10	1.90
February	1.70	1.70	1.52	1.51	1.40	1.11	1.71	1.20	1.10	2.06
March	1.70	1.70	1.30	1.50	1.40	1.15	1.70	1.19	1.10	2.40
April	1.70	1.70	1.27	1.50	1.40	1.21	1.68	1.15	1.20	2.55
May	1.70	1.70	1.27	1.50	1.39	1.25	1.50	1.14	1.20	2.60
June	1.70	1.62	1.25	1.48	1.35	1.25	1.45	1.11	1.20	2.53
July	1.70	1.60	1.33	1.41	1.35	1.30	1.45	1.12	1.25	2.50
August	1.70	1.60	1.40	1.40	1.35	1.35	1.45	1.19	1.30	2.52
September	1.70	1.60	1.46	1.40	1.34	1.42	1.41	1.20	1.35	2.64
October	1.70	1.60	1.50	1.40	1.21	1.48	1.37	1.15	1.44	2.75
November	1.70	1.60	1.54	1.40	1.13	1.57	1.29	1.10	1.60	2.86
December	1.70	1.60	1.55	1.40	1.15	1.60	1.25	1.07	1.78	3.25

WIRE NAILS AT PITTSBURGH, PER KEG OF 100 POUNDS.

	1898	1899	1900	1901	1902	1903	1904	1905	1906
January	$1.42	$1.43	$3.20	$2.22	$1.99	$1.89	$1.89	$1.75	$1.85
February	1.45	1.57	3.20	2.30	2.05	1.92	1.90	1.80	1.85
March	1.43	1.94	3.20	2.30	2.05	2.00	1.91	1.80	1.85
April	1.31	2.05	2.95	2.30	2.05	2.00	1.90	1.80	1.85
May	1.31	2.10	2.20	2.30	2.05	2.00	1.90	1.80	1.85
June	1.35	2.30	2.20	2.30	2.05	2.00	1.90	1.74	1.85
July	1.31	2.42	2.20	2.30	2.05	2.00	1.89	1.70	1.84
August	1.26	2.50	2.20	2.30	2.05	2.00	1.71	1.70	1.82
September	1.32	2.76	2.20	2.30	2.03	2.00	1.60	1.74	1.86
October	1.33	2.87	2.20	2.28	1.89	2.00	1.60	1.80	1.85
November	1.28	2.95	2.20	2.17	1.85	1.97	1.62	1.80	1.88
December	1.27	2.95	2.20	1.99	1.85	1.87	1.73	1.80	2.00

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
January	$2.00	$2.05	$1.95	$1.85	$1.71	$1.57	$1.75	$1.54	$1.54	$2.13
February	2.00	2.05	1.95	1.85	1.75	1.60	1.75	1.60	1.57	2.25
March	2.00	2.05	1.95	1.85	1.79	1.60	1.76	1.60	1.60	2.40
April	2.00	2.05	1.87	1.85	1.80	1.60	1.80	1.60	1.56	2.40
May	2.00	2.05	1.65	1.82	1.80	1.60	1.80	1.56	1.55	2.50
June	2.00	1.97	1.70	1.80	1.75	1.60	1.80	1.50	1.55	2.50
July	2.00	1.95	1.72	1.75	1.70	1.62	1.70	1.52	1.60	2.50
August	2.00	1.95	1.80	1.70	1.69	1.66	1.65	1.56	1.61	2.58
September	2.05	1.95	1.80	1.70	1.65	1.70	1.65	1.60	1.69	2.60
October	2.05	1.95	1.80	1.70	1.64	1.70	1.63	1.60	1.80	2.63
November	2.05	1.95	1.80	1.70	1.55	1.70	1.59	1.50	1.87	2.85
December	2.05	1.95	1.85	1.70	1.53	1.72	1.55	1.51	2.04	3.00

BRIEF HISTORY OF 19 YEARS OF PRICE FLUCTUATIONS.

In plotting the lines on the accompanying chart, those representing finished material have been derived by multiplying the market prices of finished material per pound by 2240. In the tables, however, while pig-iron and steel-billet prices are in dollars per gross ton, those for finished material are stated in the usual way, in cents per pound.

The chart starts with 1898, as that was the year in which the depression following the panic of 1893 showed its most disastrous effects upon iron and steel prices. After the starved consumption of the panic period, demand in 1899 found capacity entirely inadequate. Almost as striking in the other way are the declines of 1900. In 1901 prices were fairly steady, with advances in the latter part of the year bringing another series of high points in 1902, though these are moderate in comparison with 1899. The sharp decline of 1903 is distinctly shown; the slight further decline extending over nine months of 1904, with advances in the latter part of the year; some reaction in 1905, followed by advances in the latter part of the year and a comparatively stable level for the first half of 1906. Then came a strong movement upward, until substantially the levels of 1902 were reached, followed by recessions after the middle of 1907 in pig iron and billets, but finished material prices were held in the weeks following the October panic. The cooperative movement among steel manufacturers modified the decline in the depression of 1908 and in the spring of 1909 came abrupt declines in response to the insistence of some steel manufacturers, particularly of bars, that prices had been kept too high. These cuts stimulated buying which gave the strong upward trend of the second half.

In general, 1910 was a year in which the price movement reversed that of 1909, pig iron reaching again its low points of 1909, while finished materials only retraced part of the distance to the bottom touched after the open market declaration of February, 1909. Steadily declining prices marked 1911. The break in finished material in May, following notice by the Republic Iron & Steel Co. that it proposed to reduce its prices, is plainly indicated in the pitch of the curves. There was a slight recovery in December. Early in 1912, however, active competition developed a further decline and the low point for the year was touched in February in some products and in March in others. Gradually rising prices marked the late spring and summer and fall months. The high prices paid for early deliveries were a prime feature of the first four months in 1913. In May prices for early and for future delivery came closer together

and by June premiums on prompt steel had practically disappeared. Business fell off as the summer advanced. This was more marked later and in the last four months of the year prices fell off sharply.

In 1914 finished materials gradually drooped as consumption fell off. There was an effort to advance prices in August, under the belief that the war would cause an increased call for American steel; but business continued to fall off, the low prices of the year being reached in December, when many plants operated only about one-third capacity. January, 1915, brought some activity to make up for the extreme depression just preceding. As spring came on war demand for steel increased and export prices advanced. An unparalleled scarcity of steel developed in the late summer and billets advanced rapidly. Plates late in the year went soaring and wire products reached the highest point for 15 years in December. Pig iron lagged until August and then rose, the advance by the end of the year being $5 or $6 a ton.

In 1916 advance in all forms of finished material, due to the enormous demand for shell steel from the allies and to export demand from all countries, made what were considered high prices in 1915 look cheap. Mills were utterly unable to cope with the business offered, both export and domestic. Pig iron, which for months lagged far behind steel, began advancing in September after heavy sales to Europe, and in November the excited scramble for iron for delivery in 1917 sent prices up by leaps and bounds.

Prices used in plotting the charts are those asked by producers for delivery in from one to three months and thus do not represent the extreme prices paid at times for prompt delivery.

The Chairman. This will conclude the hearings if no one else desires to be heard.

(Thereupon, at 4.30 o'clock p. m., the committee adjourned, subject to the call of the chairman.)

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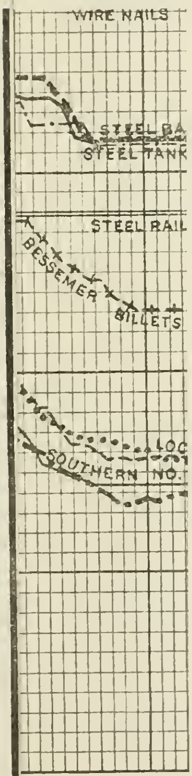

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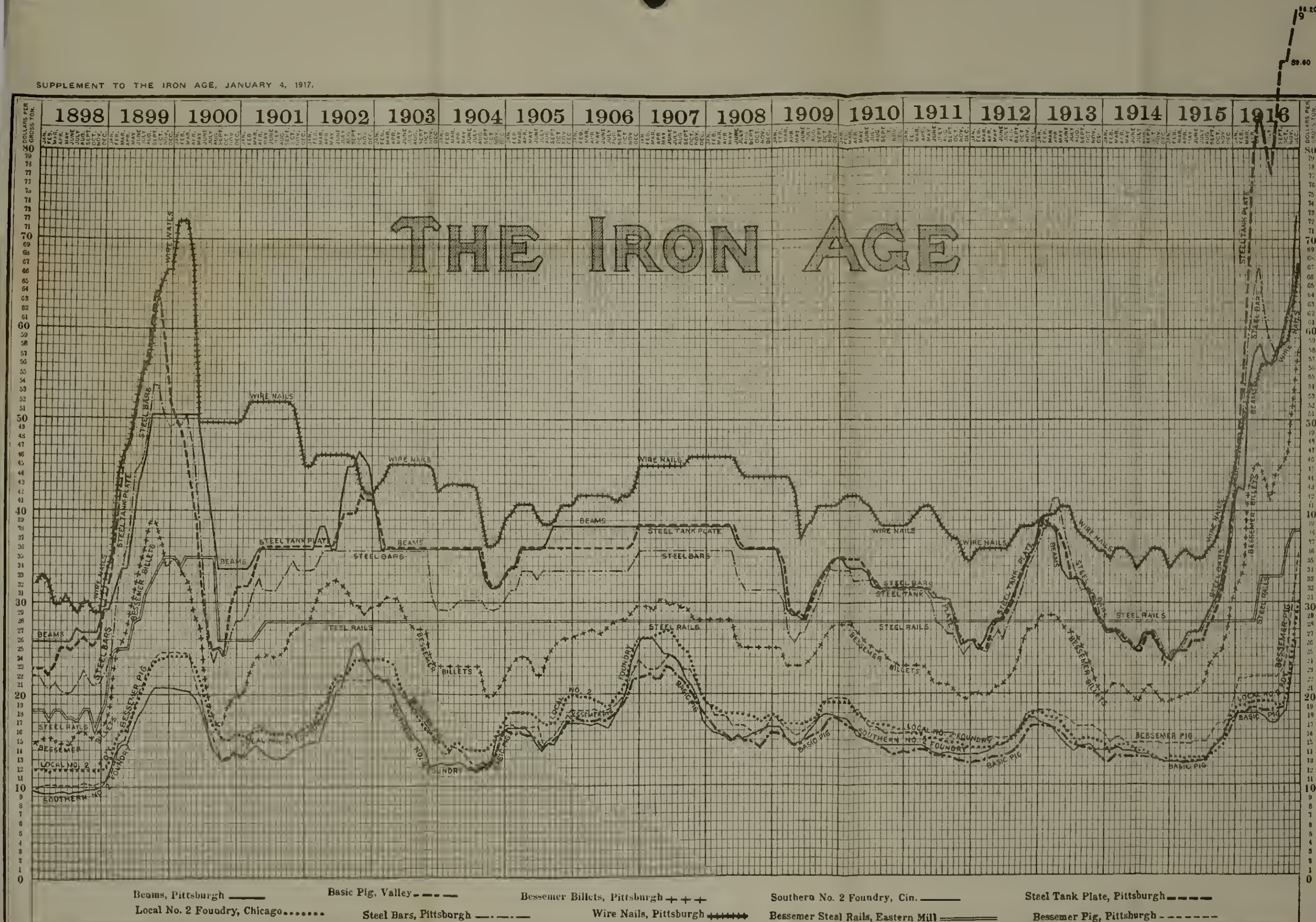

Fluctuations in the Prices of Crude and Finished Iron and Steel from January 1, 1898, to January 1, 1917—Gross Tons

14774—17. (To face page 70.)